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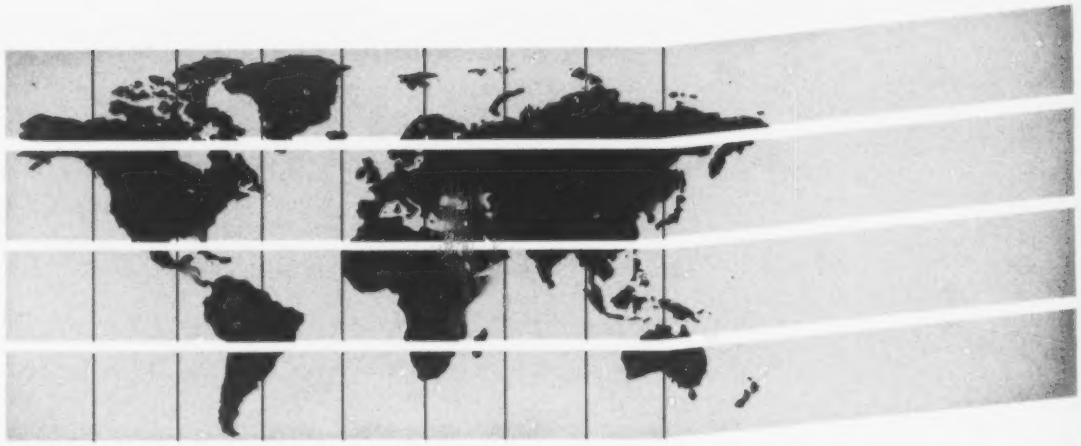
OUTLOOK FOR COMMERCIAL AIRCRAFT



1980-1994

JUNE 1980

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INTRODUCTION

Beginning in the fall of 1977, the Douglas Aircraft Company undertook a complete revision of its long-range forecasting approach to incorporate macroeconomic modeling and fleet-planning techniques, as well as to expand the airline forecast base. That base now includes 204 operators of jet aircraft, representing a potential fleet of almost 6200 passenger and freighter units by 1981.

This report summarizes the results of the second industry traffic and capacity forecast using the new data base and forecasting approach. The results are given in two sections. The first section is an economic overview and the passenger traffic forecasts resulting from the economic modeling work at Douglas. The second section is a summary of the detailed airline traffic and capacity forecasts. Appendixes provide definitions, summary forecast data, and a list of the airlines studied.

CHEVRON

WORLD ECONOMIC OUTLOOK

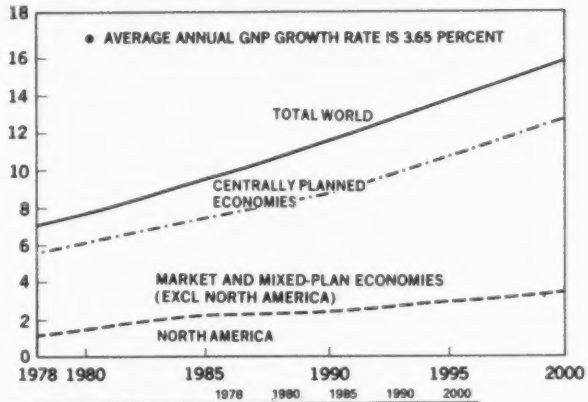
In 1979 the world's production and consumption sectors were brutally reminded of the importance of energy and the fragility of the supply of oil. The decline in Iranian oil output caused shortages, and the spot market price for crude oil skyrocketed. These oil-related problems were aggravated by the American hostage problems in Iran and the Soviet incursion into Afghanistan.

A raised level of uncertainty coupled with the rising real costs of energy and many other raw materials is dampening the recovery in Europe, severely limiting the growth of nonindustrial nations, and forcing the United States to raise levels of military spending. The outlook for growth in the near future is very low while the inflationary trend continues to worsen. Several of the ongoing features of today's global economic landscape are listed below:

- The world gross product is expected to increase 2 percent in 1980, with an increase of 1.6 percent in the member nations of the Organization for Economic Cooperation and Development (OECD). This weak growth will be followed by a weak recovery of approximately 3 percent in 1981.
- The OECD long-term outlook for the 1980s is 3.3 percent.
- Inflation in the OECD area is foreseen to rise to 10 percent in 1980, then recede during the ensuing decade toward the 6-percent level.
- World fuel prices increased 43 percent in 1979 and seem to be increasing 40 percent in 1980. Fuel prices are expected to rise about 3 percent per year above the prevailing rate of inflation during the next decade.
- Deficits in non-oil-developing countries rose rapidly to $47 billion in 1979 and are expected to rise to $60 billion in 1980. This follows a five-year (1974-78) cumulative deficit of $146 billion. These deficits can no longer be accommodated by borrowing, and growth in many less developed countries will diminish.

LONG-TERM WORLD ECONOMIC OUTPUT

1975 U.S. DOLLARS AND 1975 EXCHANGE RATE



GROSS WORLD PRODUCT (TRILLIONS OF 1975 U.S. DOLLARS)

	1978	1980	1985	1990	2000
MARKET ECONOMIES	5.73	6.16	7.44	8.94	12.45
PLANNED ECONOMIES	1.52	1.66	2.05	2.48	3.51
TOTAL WORLD	7.25	7.82	9.49	11.42	15.96

- Due to the high inflation rates throughout the world, many major countries are focusing on controlling inflation at the expense of growth and employment.

- Protectionism in world trade is increasingly being considered as a policy to maintain domestic employment and production.

OUTLOOK FOR THE DEVELOPED NATIONS

United States

The country is clearly in a recession. High interest rates have produced a severe downturn in the housing industry and consumer durable sectors. In addition, inflation and the windfall profits tax on oil are increasing the tax burden on individuals as well as business.

- The recession is forecast to last three quarters, beginning in the second quarter of 1980. The peak to trough should be slightly larger than 3 percent of the real gross national product (GNP).

- A tax cut is expected to be implemented in the first quarter of 1981 to offset the Social Security tax increase.

- Inflation, as measured by the GNP deflator, is forseen to be 9 percent in 1980 with only slight improvements during the year. The Consumer Price Index is expected to show dramatic improvement later in the year as increases in oil prices subside and interest rates decline.

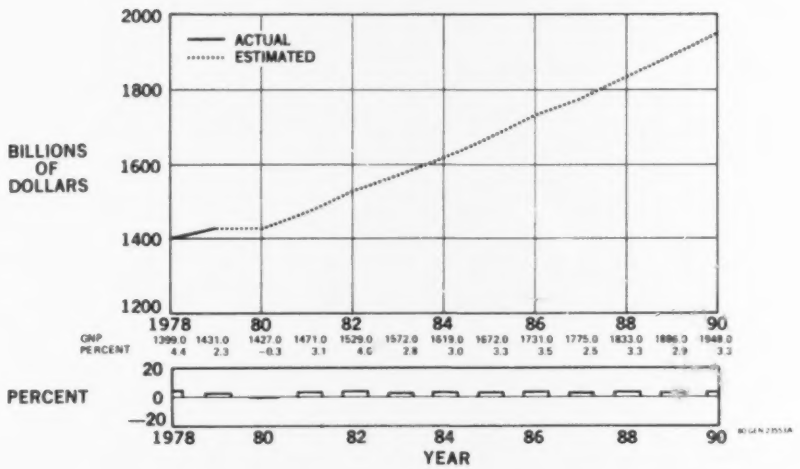
- The unemployment rate is expected to rise rapidly to over 8 percent.

- GNP growth in the 1980s is expected to average 2.6 percent as the labor force grows. Labor productivity is expected to be better than in the 1970s but worse than in the 1960s.

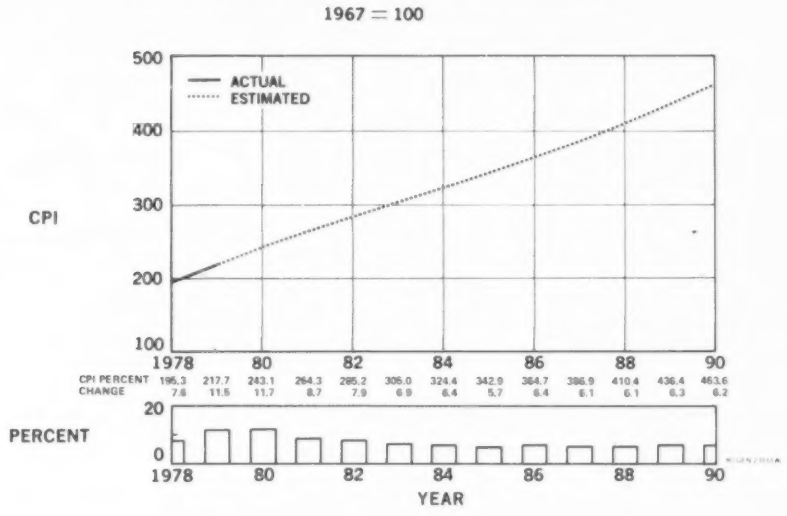
- Inflation is foreseen to decline slowly to the 6-percent level during the 1980s, assuming no major worldwide disruptions.

GROSS NATIONAL PRODUCT

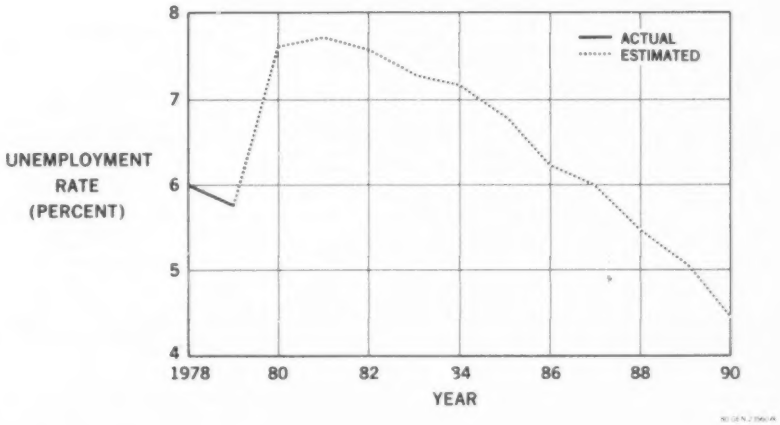
CONSTANT 1972 DOLLARS



U.S. CONSUMER PRICE INDEX (CPI)



U.S. UNEMPLOYMENT RATE



Japan

- Government spending is expected to rise 10 percent in nominal terms, or remain virtually flat in real expenditures.
- The current account deficit is expected to worsen from $4.4 billion in 1979 to $9 billion in 1980.
- Rising prices due to the cost of oil and a depreciating yen could result in inflation rates near 10 percent in 1980, after a rate of 3.6 in 1979.
- GNP growth is expected to slow to 3.6 percent in 1980, from 5.8 percent in 1979. Some forecasts are as low as 2.0 percent.
- A declining domestic demand due to rapidly rising prices and a depreciating yen may lead to a renewed export drive. Japanese products are expected to displace U.S. and European goods in Third World markets.

Australasia

- Australia and New Zealand are expected to be buffeted by world trade cycles in the 1980s. This is due to the nature of their economies, which are characterized by relatively large exportations of food and wool products. The current recession and accompanying trade barriers have dampened the Australasia forecast.

- Real growth is forecast to slow to 2.7 percent in Australia and 2.0 percent in New Zealand in the 1980s. Inflation for the two countries is forecast to be around the 10-percent level, about 3 to 4 percent above the U,S. rate.

- Foreign investment, particularly in the energy areas of coal and natural gas, is expected to grow significantly in the 1980s.

- Australasia cooperation and Australasia-Japanese cooperation will probably increase in the 1980s. This cooperation should increase economic growth in the area and provide a base for additional political alliances.

Germany

- GNP growth is expected to slow to 2 percent in 1980 from 4 percent in 1979.

- The fixed investment spending sector led the 1979 recovery, responding to tax cuts and low interest rates. Growth is expected to slow from 10 percent to 6 percent.

- Germany's relatively rapid growth last year caused a rapid decline in its foreign balances. German imports increased 9 percent during 1979, and Germany's current account went into a deficit. A larger deficit is expected in 1980.

- Germany's exports benefited in 1979 from the new European Monetary System and grew 8 percent. The outlook for 1980 is for a more modest growth of 4 percent.

The declining growth in Japan and Germany, combined with a recession in the United States, will lead the industralized world toward substantially reduced growth.

United Kingdom

Following a slight GNP decline in 1979, the United Kingdom will suffer a 2-percent decline in 1980. The North Sea oil situation is the one strong point in the current economic picture. Inflation continues at a 15- to 16-percent pace.

France

France will experience a further weakening in GNP growth. After a 3-percent growth in 1979, rising inflation, weakening investment, and a deteriorating current account will reduce growth to below 2 percent. The unemployment picture will begin to worsen in late 1980. Inflation is expected to remain in the 11-percent area, adversely impacting exports and raising borrowing costs.

Italy

The Italian outlook is for continued high (15-percent) inflation, a shrinking of the current account surplus, and GNP growth to be half of 1979's performance, that is, 2 percent in 1980 after 4.2 percent in 1979.

The rest of Europe and Canada are strongly dependent on external trade. The weakening of the larger economies and rising inflation will severely reduce growth. A moderate recovery to growth near 3 percent is forecast for 1981.

OUTLOOK FOR LESS DEVELOPED NATIONS

OPEC Nations

- The current account surplus escalated from near zero in 1978 to $65 billion in 1979 and is expected to reach $75 million in 1980.
- The OPEC nations are unlikely to repeat their 1974-76 behavior when they rapidly escalated imports. Iran has drastically reduced imports, and Saudi Arabia and other Persian Gulf nations are not introducing any new development plans.
- The surplus will be invested in financial assets, which should begin to reduce the services account imbalance during the 1980s.

Non-Oil-Producing Nations

- Aggregate current account deficits are increasing $12 billion a year, rising from −$24 billion in 1977 to −$60 billion in 1980.
- Due to overextended debt positions, many less developed countries will be forced to reduce growth in 1980 and beyond.
- Brazil faces severe problems with a current account deficit equal to 96 percent of its exports. A heavy dependence on oil will continue to be a burden on economic growth.
- Korea continues to grow rapidly at an 8-percent rate, but this is 2 to 3 points below recent experience. Inflation is increasing to the 20-percent area.
- The GNP of Mexico, soon to be the largest non-OPEC exporter of oil, will continue to grow at 6 percent, based on large public investment expenditures. Mexico continues to be the largest less developed country borrowing in the Eurocurrency market, and its debt service ratio of over 60 percent is the highest in the world; however, rising oil and natural gas revenues promise to ease the situation in the long run.

SUMMARY OF LONG-TERM DEVELOPMENT

The events of the last two years will continue to affect the long-term economic development in the 1980s:

- There will probably be a greater interdependence of developed and developing nations on each other.

- Cyclical recession in the mid-1980s will probably result from oil price pressures incurred during the recovery in 1982-84.

- Petrofunds will not be used to maintain trade flows, and world growth will not reach its potential.

- Debt service problems will restrain the growth of less developed countries, reduce their imports, and add to a generally weaker economic world.

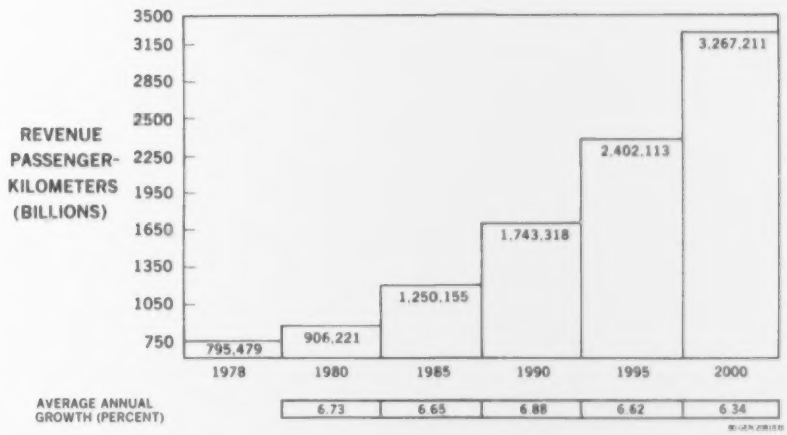
- Reduced growth and rising unemployment problems may increase calls for protectionism in OECD nations, especially against the exports of the newly industrialized nations.

- The growth in world GNP from 1979 to 1990 is estimated to be 3.5 percent annually.

WORLD SCHEDULED REVENUE PASSENGER-KILOMETER FORECASTS

The following traffic forecasts are based on econometric models of the 19 international air traffic regions defined by the International Air Transport Association (IATA), plus domestic traffic models of the United States and estimates of non-U.S. domestic traffic. For each of the traffic regions, a behavioral equation was developed to explain and forecast traffic volumes from a weighted average of the gross domestic products of the countries involved, as well as a yield series, deflated by a composite price index reflecting both inflation and exchange rates in these countries.

WORLD SCHEDULED REVENUE PASSENGER-KILOMETERS



RESULTS

The long-term growth rate of world scheduled revenue passenger-kilometers (RPKs, see Appendix A) is 6.4 percent over the period from 1979 to 2000. The growth in the international sectors is somewhat higher at 8.0 percent due to higher economic growth and lower yield increases than in the domestic sector. Because of the weakness in the U.S. domestic market, the domestic sector growth is 5.1 percent.

- In 1980, world RPK growth is expected to rise 2.6 percent. International growth is expected to be 6.3 percent, and domestic growth will be negative due to an expected 3-percent decline in the U.S. market.

- The uncertainty of the near-term market is dominated by the doubling of aviation fuel costs in 1979 and the expected rises in 1980. Some forecasts expect an additional doubling of fuel costs in 1980, but increases of 40 to 50 percent appear more likely.

- The approval of many fare increases could result in near-term increases of 20 to 30 percent, but yield increases have been less due to special fare offerings.

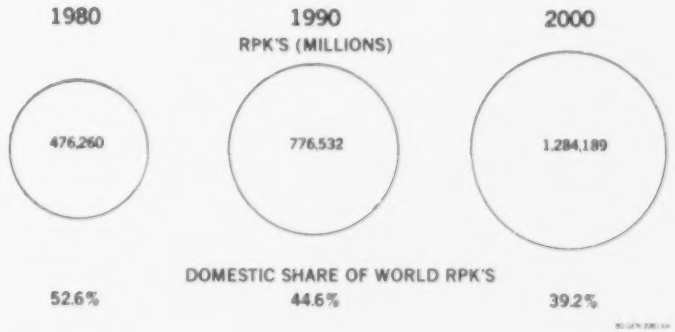
- Additional fuel problems have been caused by availability restrictions in some parts of the world. These forecasts assume there will be no severe availability problems.

DOMESTIC TRAFFIC

- U.S. domestic traffic, which is 71 percent of the world domestic RPKs, is expected to decline by 3 percent in 1980. The long-term growth, from 1979 to 2000, is expected to be 4.5 percent annually. This growth is almost entirely due to the rise in income, with no stimulus from lower fares or other factors.

- Domestic traffic within other countries is expected to grow at a rate of 5.4 percent per year from 1979 to 2000. There is no fare stimulation in this scenario, due to the monopoly structure of most domestic markets and the impact of rapidly rising fuel and labor costs.

TOTAL WORLD DOMESTIC REVENUE PASSENGER-KILOMETERS



INTERNATIONAL TRAFFIC

International traffic has been forecasted using the 19 IATA-defined regions. This includes 12 interregional flows and seven intraregional flows. Data by region are included in Appendix B.

- Total international traffic will increase at an annual rate of 7.9 percent over the period from 1979 to 2000. This is derived from an average income elasticity of 1.85 times the world GNP growth of 3.5 percent, plus a price elasticity of −1.1 times an average real yield decline of 1.0 to 1.25 percent per year.

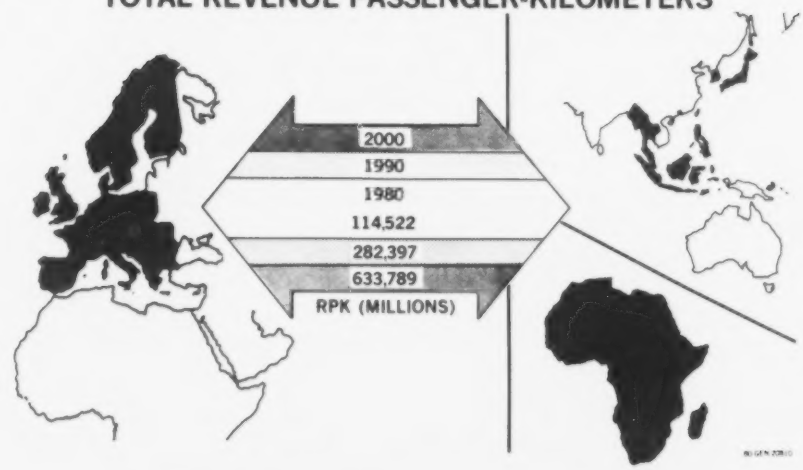
- All international regions will increase their share of the world market from 46 percent in 1978 to 61 percent in 2000.

- The Far East-Europe route is expected to be the fastest growing, increasing at an average annual rate of nearly 10 percent.

- The share of the world traffic on the Far East-Europe route is expected to grow from 6.4 percent in 1979 to 12.5 percent in 2000.

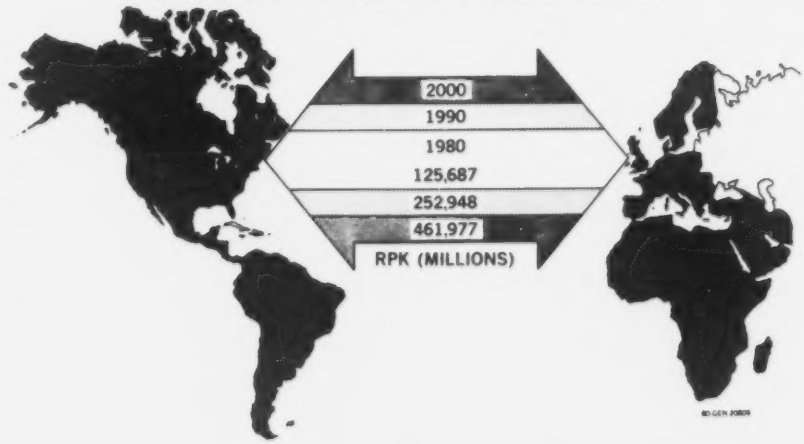
- The long-term growth of the North Atlantic market is expected to be 5.9 percent. This does not include any further diversion from the charter market.

EUROPE-AFRICA, EUROPE-ASIA
TOTAL REVENUE PASSENGER-KILOMETERS



NORTH AMERICA-CENTRAL AMERICA,
SOUTH AMERICA-PACIFIC-OTHER
TOTAL REVENUE PASSENGER-KILOMETERS

NORTH ATLANTIC, MID-ATLANTIC, SOUTH ATLANTIC
REVENUE PASSENGER-KILOMETERS



In order to more clearly see the long-term trends in the various markets, four combined market areas are presented. These are (1) the Atlantic market, comprising North, Mid-, and South Atlantic routes; (2) the market of North America to the other Americas and Pacific Basin, including Central America, South America, South Pacific, the North and Mid-Pacific, and other routes; (3) the European market, comprising Africa, the Middle East, and the Far East (including Australasia); and (4) the combined intraregional markets.

ATLANTIC

- The Atlantic marketplace grows at an annual rate of 6.7 percent. The non-U.S. sectors are the more rapidly growing due to the more active income growth in those sectors. RPKs will rise nearly 4 times from 118 billion in 1979 to 462 billion in 2000.

NORTH AMERICA

- The long-term growth rate is expected to be 8.2 percent.
- RPKs will grow over 5 times to 423 billion in 2000 from 80.9 billion in 1979.
- The growth rate during the 1980s is predicted to be 8.8 percent.

EUROPE

- The average annual growth in the period from 1979 to 2000 is 8.8 percent due to the rapid growth in the Far East and Middle Eastern markets.
- RPKs will grow nearly 6 times from 108 billion in 1979 to 634 billion in 2000.
- In 1985 this sector will be the largest in the world for international traffic.
- The growth rate during the 1980s is expected to be 9.1 percent.

INTRAREGIONAL

- The long-term annual growth rate is expected to be 7.7 percent. The largest sectors will be Europe, the Far East, and by 2000 the Middle East.
- By the year 2000, the Far Eastern market will be nearly as large as the European. The European market is forecasted to be 175 billion RPKs, up more than 4 times from 1979; the Far East will be 160 billion RPKs, increasing nearly 5 times above the 1979 level.
- The entire intraregional market will increase 4.8 times from just under 100 billion RPKs in 1979 to 464 billion in 2000.
- The annual growth rate during the 1980s is expected to be 8.0 percent.

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AIRCRAFT CAPACITY FORECAST

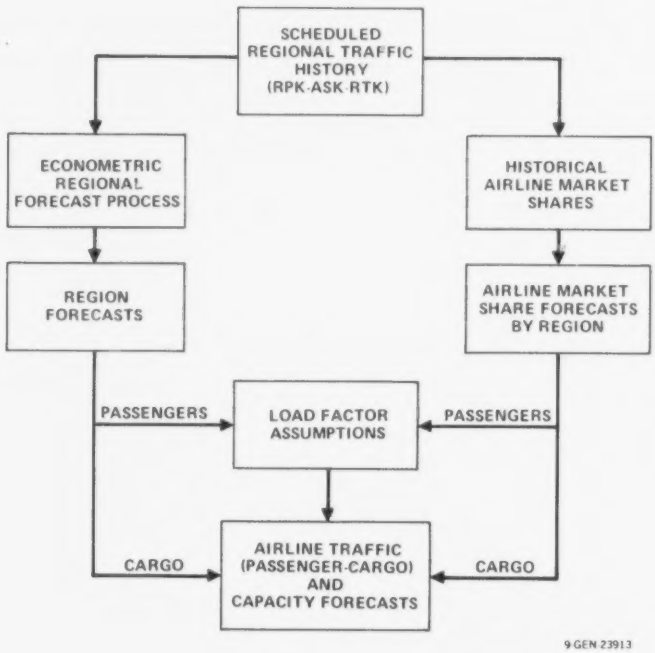
In order to estimate the worldwide demand for aircraft from 1980 to 1994, an airline base consisting of 204 passenger and cargo operators has been created (see Appendix C). As a group, these airlines carry the vast majority of the world's air traffic. By way of comparison, in 1978 the total revenue passenger-miles generated by these airlines was 1.2 percent greater than that of the airlines comprising the International Civil Aviation Organization (ICAO).

Aircraft capacity requirements were forecasted by analyzing each airline separately. The process developed to do this involved forecasting traffic, projecting aircraft load factors and productivities, and performing fleet planning studies on an individual carrier basis. Resulting aircraft unit requirements were expressed in terms of generic types, each generic class representing a group of aircraft types with similar range and size characteristics. Six classes of passenger aircraft and three of cargo were selected to cover the spectrum of existing and expected types.

APPROACH

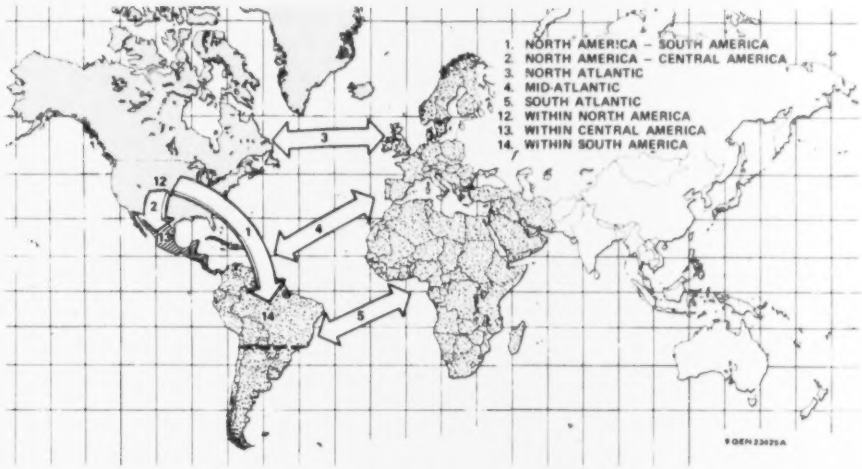
Characteristics such as size, marketing philosophy, financial status, route structure, and fleet mix differ extensively between airlines. This fact necessitates the forecasting of aircraft requirements by analyzing each carrier individually. To handle 204 carriers efficiently, an approach was developed which allowed sufficient depth of analysis so that reliable estimates of future needs could be made within a practical and reasonable time period.

CAPACITY FORECAST PROCESS

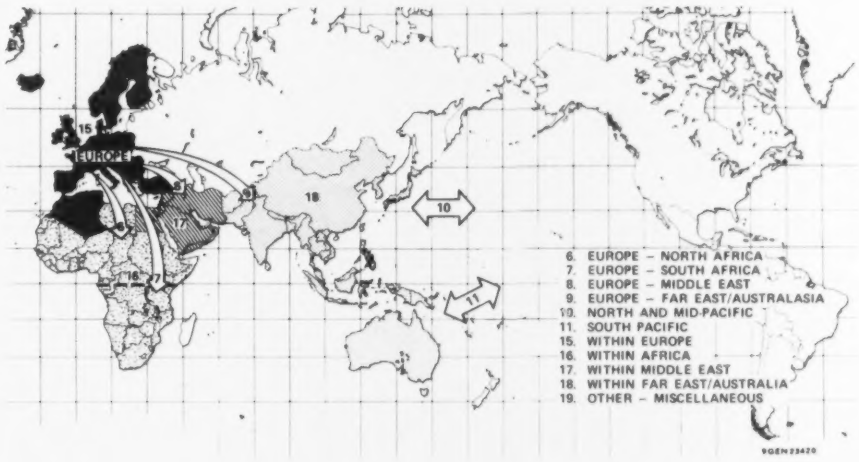


Because capacity requirements depend directly on traffic demand, the passenger and cargo forecasts were given highest priority in the study. Following IATA definitions, world air traffic was divided into nineteen inter- and intraregional flows plus one region representing domestic service. Econometric models were used to forecast the growth of each regional traffic flow in terms of annual revenue passenger-kilometers (RPKs) and revenue tonne-kilometers (RTKs) for each study year. To derive the traffic of an individual airline, the expected market share within each region in which the airline operates was projected. This participation level was based on estimates of the airline's historical involvement in the region and modified by information on planned changes in the future activities of the carrier or its competitors.

INTERNATIONAL REGIONAL TRAFFIC FLOW



INTERNATIONAL REGIONAL TRAFFIC FLOW



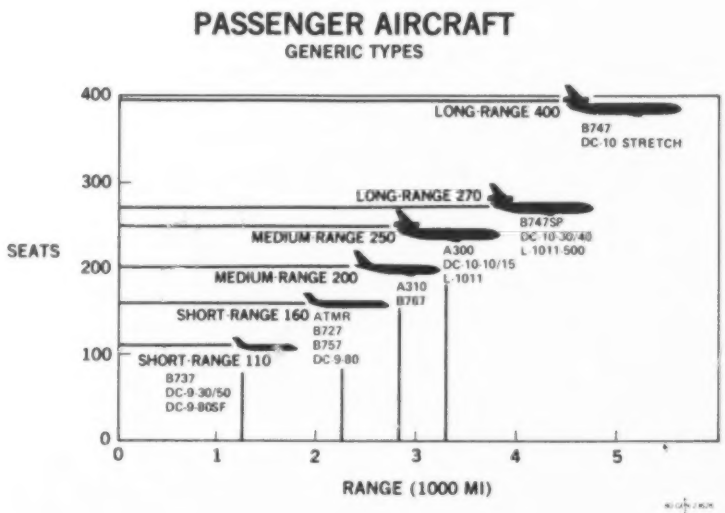
After the regional traffic forecast and the projected airline market share were determined, the carrier's total traffic was obtained by summing that of all regions. Finally, traffic demand was converted to capacity requirement, in terms of available seat-kilometers (ASKs), by applying projected load factors to the forecasted RPKs.

Nonscheduled traffic for each airline was forecasted separately, with consideration given to the expected near-term movement of scheduled service to charter traffic as a result of declining load factors and general fare increases. However, charter traffic in the U.S. is not expected to return to its 1977 level until 1984. Load factors for charter service were maintained at the high levels typical to this sector of airline traffic. Nonscheduled freight traffic was assumed to be "all freight" and was forecasted from historical trends to grow at moderate rates.

After overall airline capacity needs had been forecasted, a separate analysis was made to project the length of service of existing aircraft and to determine the impact of near-term purchases. In addition, productivity factors (utilization, block speed, seat capacity, cargo density, etc.) were projected for the study period. In general, it was assumed that the productivity of existing aircraft would remain constant at 1979 values, except for those airlines expecting significant productivity improvements.

The difference between the capacity required by an airline and the capacity available in the future from aircraft on hand and on order results in a capacity gap.

The gap is satisfied by combinations of six types of passenger aircraft and three types of cargo aircraft (see Appendix A).



The appropriate combination of generic types for the airline was determined based on a variety of fleet planning factors:

Aircraft assignments

- Where different types are used
- Changes in future usage

Carrier route structure
- Existing routes
- New route expansion

Carrier equipment actions
- Purchases and options
- Retirements
- Configuration changes

Fleet planning analysis
- Douglas studies
- Carrier fleet plans
- Sales contacts

DEREGULATION

With the passage of the Airline Deregulation Act of 1978, the U.S. airlines entered a new era of competition and opportunity for route restructuring. Although it is still too early to predict the final outcome, it appears that trunk carriers and, to some extent, local carriers have chosen restructured route systems that emphasize longer range and higher volume. This trend should continue throughout 1980, presenting an opportunity for further expansion of both local and commuter airlines. It is also expected that an eventual alignment of trunk routes and associated feeder routes will take place. Preliminary first-quarter 1980 traffic results indicate that growth in local and commuter traffic plus international traffic have approximately offset the decline in domestic trunk traffic.

The current problems of increasing fuel prices, unprecedented inflation, and high unemployment somewhat obscure the effects of deregulation. When considered along with the continuing retention of inefficient aircraft, the resulting decline in load factors will continue throughout 1980. By late 1980, however, a turnaround in traffic is expected, as is a somewhat accelerated retirement of inefficient aircraft.

In contrast to the near-term domestic outlook, the new services and carriers now entering the international areas should continue to stimulate international traffic. Whatever final market structure evolves, the result should be increased traffic growth for the future as airlines shift resources to new markets and mergers result in increased efficiencies.

COMPARISON WITH 1979-1993 FORECAST

Primarily because of the long-term expectations of higher operating costs due to higher fuel prices and questionable fuel availability, the average annual RPK growth rate is expected to be approximately 0.5 percent less per year for world traffic and 1.4 percent less per year for U.S. traffic than was forecasted a year ago. In terms of total traffic adjusted for differing numbers of airlines, these reduced rates mean 5.5 percent fewer world RPKs and 16 percent fewer U.S. RPKs by the year 1993. These lower traffic figures translate to almost 18 percent fewer passenger aircraft units in 1993 (not adjusted for retention of used aircraft).

All-freight total cargo (freight plus mail) revenue tonne-kilometers will be 62 percent less by 1993 than was forecast a year ago.

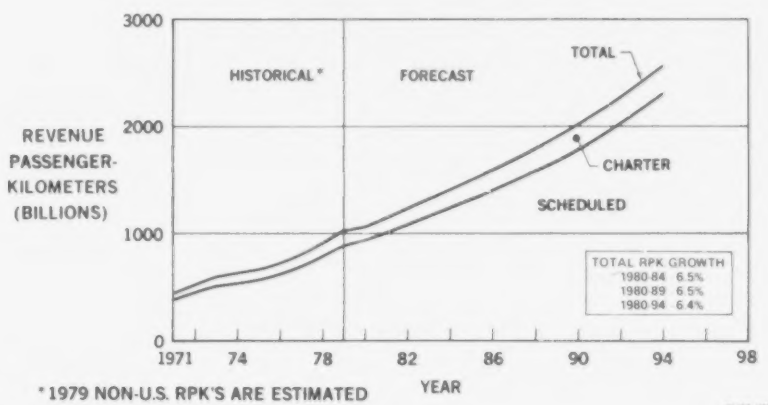
WORLD PASSENGER TRAFFIC

The high RPK growth experienced by the world's airlines in 1979 was a continuation of the strong gains through the 1970s. Traffic from 1971 to 1979 for both scheduled and charter passengers grew at a 10.6 percent per year, being especially strong in 1972, 1973, 1978, and 1979.

This strong growth will moderate as non-U.S. markets reach more mature levels. World RPKs will increase at just under 7 percent through the early 1980s, after an increase of less than 5 percent in 1980. Long-term growth into the early 1990s should be about 6 percent. After a near-term increase in charter traffic relative to scheduled traffic, charter growth rates should moderate somewhat in relation to scheduled traffic as a result of deregulation and the accelerated retirement of standard-size DC-8 and B707 aircraft from the world's fleets over the next 5 years.

TOTAL WORLD PASSENGER TRAFFIC

ANALYSIS OF 202 AIRLINES



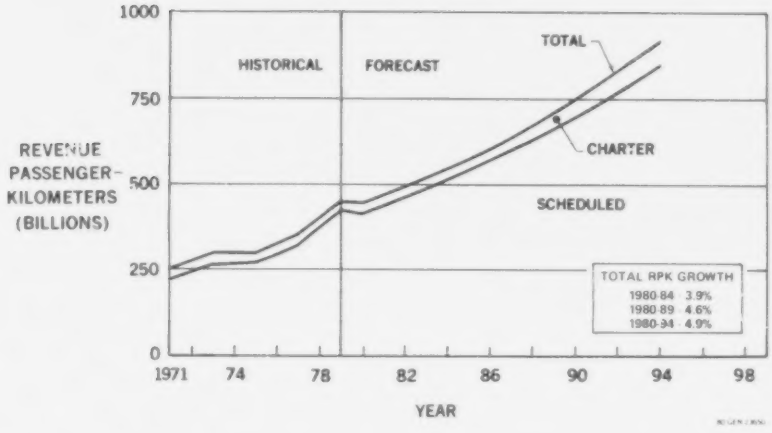
*1979 NON-U.S. RPK'S ARE ESTIMATED

Growth for U.S. airlines over the past 8 years has been more cyclical and slower (7.5 percent annually from 1972 to 1979) than for non-U.S. airlines, with an estimated decline in 1980 traffic of −1.6 percent. As outlined in the following paragraphs, U.S. and non-U.S. airlines' RPKs are expected to reach 0.9 and 1.7 trillion, respectively, by 1994 from respective bases in 1979 of 450 and 570 million RPKs. When analyzed by regions, the airlines domiciled in Europe will generate, by 1994, 50 percent more RPKs than were carried in 1979 by all U.S. carriers, while the Pacific and Asian region carriers will generate over 90 percent of the 1979 U.S. RPKs.

A comparison of the scheduled, charter, and total RPK growth rates for the world's airlines by base region follows. Appendix D gives detailed traffic projections by year as well as historical data sources. It also lists detailed fleet projections by year for each generic class of passenger aircraft.

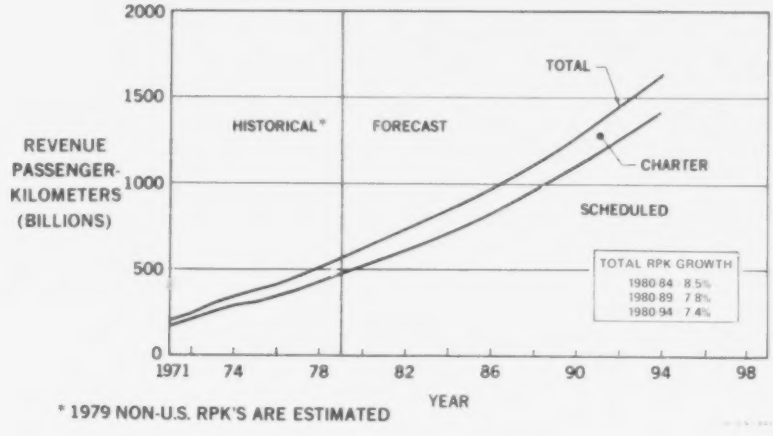
U.S. PASSENGER TRAFFIC

ANALYSIS OF 36 AIRLINES



TOTAL NON-U.S. PASSENGER TRAFFIC

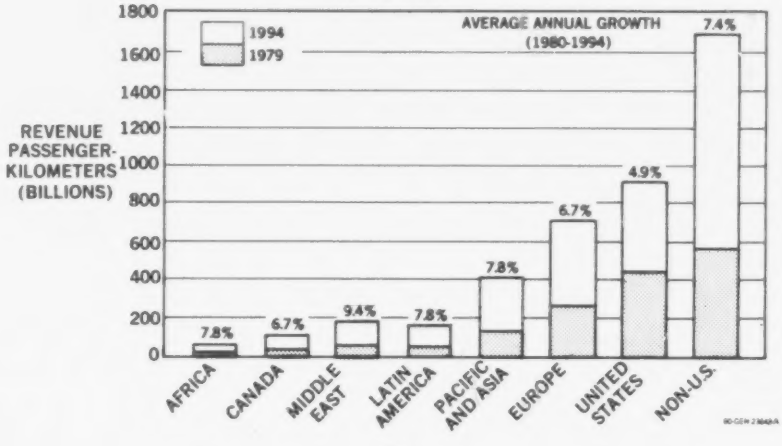
ANALYSIS OF 166 AIRLINES



* 1979 NON-U.S. RPK'S ARE ESTIMATED

ALL-SERVICE REVENUE PASSENGER-KILOMETERS

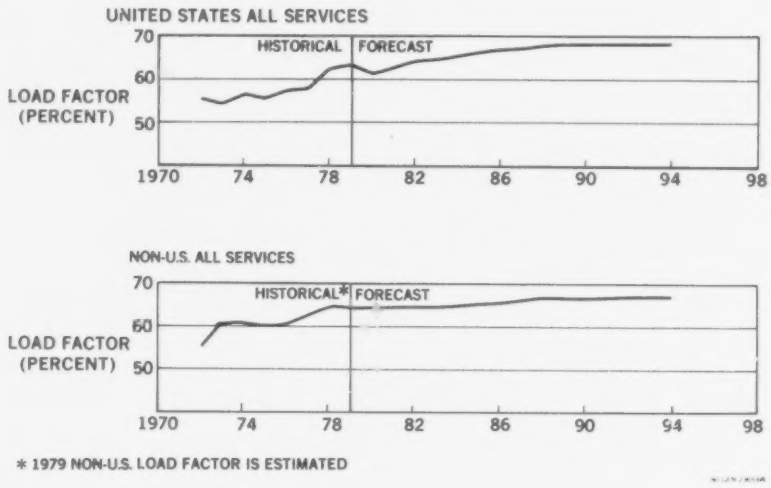
BY DOMICILED AIRLINES
(1979-1994)



LOAD FACTOR

Load factors continued to increase during 1979 with a slight reduction in charter load factors being offset by the gains of the scheduled carriers. Load factors are expected to decline during 1980, not returning to the 1979 levels until 1982. Beyond 1982, they will continue to increase in order to offset higher operating costs, finally stabilizing at the new levels in the early 1990s.

AVERAGE PASSENGER LOAD FACTOR



* 1979 NON-U.S. LOAD FACTOR IS ESTIMATED

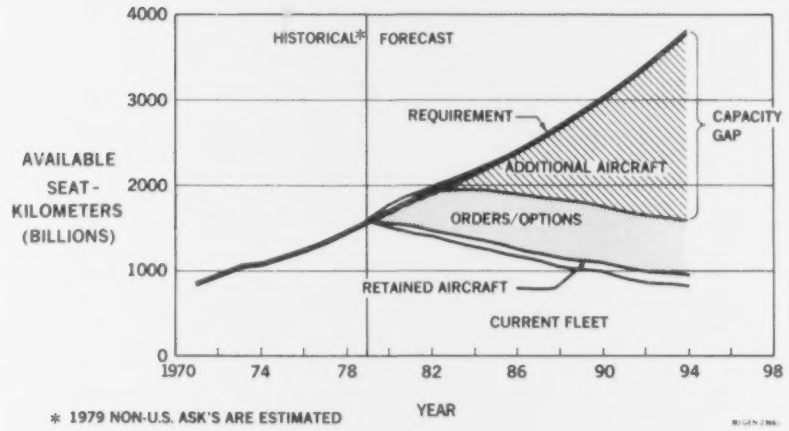
PASSENGER CAPACITY REQUIREMENTS

Continued traffic growth through the next decade establishes the need for increased passenger aircraft capacity expressed in ASKs. The difference between the capacity required to carry forecast traffic and the capacity of fleets creates a gap that must be filled by additional aircraft. This capacity gap is further widened by the retirements of older jet aircraft, even though some of these aircraft will find their way back into service with other airlines. Of the additional capacity of 2.8 trillion ASKs to be added from current orders and options and from additional aircraft, 22 percent of the ASKs will replace retired aircraft and 78 percent will accommodate growth in traffic. Current projections show that by 1994 almost 60 percent of the capacity will be provided by seats sold after 1979.

There is a slight (approximately 2 percent) overcapacity problem expected in the early 1980s even allowing for reduced load factors and accelerated permanent retirement of aircraft. In response, the airlines are likely to adopt a combination of the following policies: allowing further load-factor slippage; cutting service; reducing productivity; and grounding aircraft.

CAPACITY DEMAND/SUPPLY FORECAST

ALL-SERVICES — WORLD



* 1979 NON-U.S. ASK'S ARE ESTIMATED

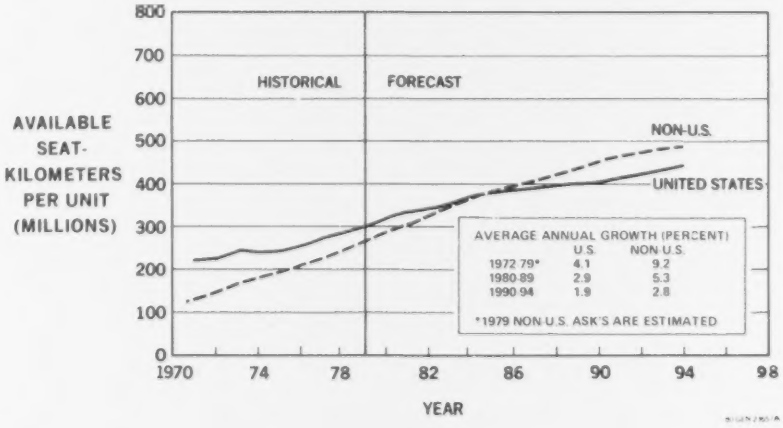
After all the additional capacity requirements had been identified, fleet planning analysis was used to establish the types of aircraft to be added by each airline in the study.

AIRCRAFT PRODUCTIVITY

An airline's productivity is a function of the productivity of its constituent aircraft types and the mix of aircraft in the fleet. Aircraft productivity for passenger aircraft is defined as available seat-kilometers — the product of seats, annual block hour utilization, and block speed; for cargo aircraft it is defined as revenue tonne-kilometers — the product of fuselage volume, cargo density, load factor, annual block hour utilization, and block speed.

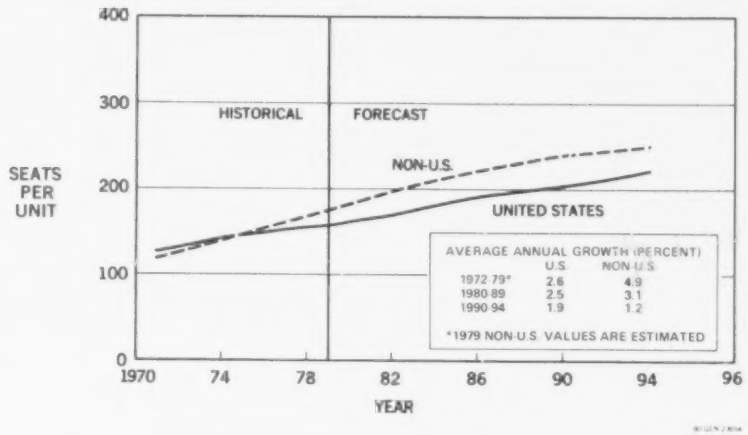
ASKs per unit are expected to increase over the study period. These increases are primarily due to the addition of aircraft larger than those being replaced and to the increased utilization of available aircraft.

AVAILABLE SEAT-KILOMETERS PER AIRCRAFT



During the forecast period, a significant shift in the comparative average productivity between U.S. and non-U.S. aircraft is expected. In 1979, U.S. aircraft were, on the average, 13 percent more productive in terms of ASKs per unit than their non-U.S. counterparts. By 1994, however, non-U.S. aircraft will be almost 11 percent more productive than U.S. aircraft. Differences in available seats per aircraft appear to be fairly constant, with non-U.S. aircraft having 11 to 13 percent more than U.S. aircraft throughout the forecast. In comparison, differences in average annual utilization present a dramatic change. In 1971, the utilization of non-U.S. aircraft was two-thirds that of U.S. aircraft. By 1979, this figure had increased to 81 percent and by 1994, it will increase to almost 95 percent. The resultant productivity increase means a non-U.S. aircraft, on the average, will provide almost twice as many ASKs by 1994 as its counterpart provided in 1979.

AVAILABLE SEATS PER AIRCRAFT



RETIREMENTS

Aircraft retirements were estimated as part of the detailed analysis of individual airlines. The estimates were based on considerations of route system, equipment age, noise regulations, and economic productivity. As a general rule, it was assumed that DC-8-61 and -63 series aircraft would be reengined, and most noncomplying DC-9s and B727-200s would be quieted to permit continued use. It was further assumed that B707s, standard-size DC-8s, and B727-100s would be retired from U.S. carriers and many foreign carriers due to their noncompliance with noise regulations and decreasing economic performance resulting from rising fuel prices. It was assumed that very few wide-body aircraft would be retired during the 1980 to 1994 period, even though some will be over 20 years old.

RETENTION OF RETIRED AIRCRAFT

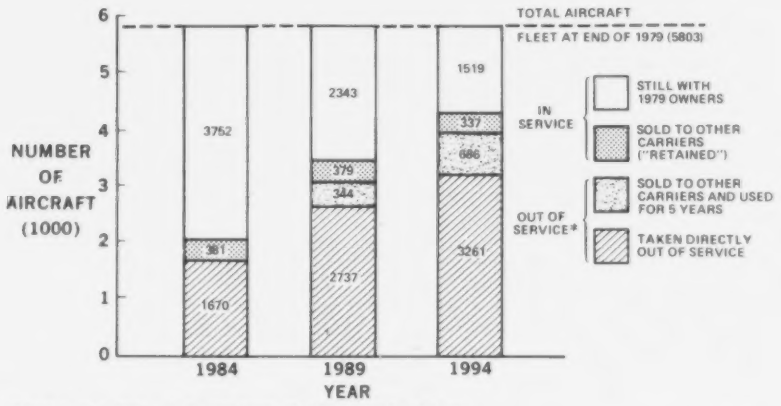
Of the aircraft that were owned in 1979 by airlines in the study group, a percentage will be retired by their original carriers and acquired by other airlines in the group. These "retained" aircraft are themselves subject to retirement by their secondary owners after a prescribed period of five years. Aircraft that are retired and not reacquired by another airline are classified as no longer in service or permanently retired. It was assumed that either they are purchased by operators outside the airline base group or they are grounded.

FLEET FORECAST

Of the 5803 passenger aircraft (5032 jet, 771 nonjet) in the combined fleet of 202 passenger airlines at the end of 1979, 68 percent (over 3900 aircraft) will be permanently retired by 1994. Of the 4284 aircraft that are retired by their present owners during the forecast period, more than 300 will be acquired by other airlines and retained as used aircraft through 1994.

PASSENGER AIRCRAFT MARKET

EFFECTS OF RETIREMENTS ON 1979 FLEET

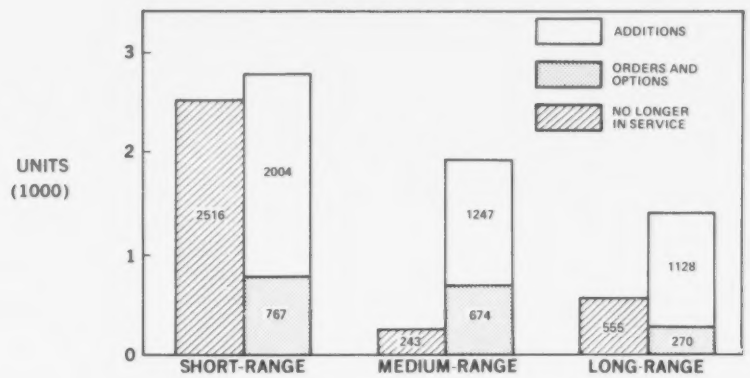


* OUT OF SERVICE = SOLD TO CARRIERS OUTSIDE OF STUDY GROUP OR PERMANENTLY GROUNDED

PASSENGER AIRCRAFT MARKET

AIRCRAFT RETIREMENTS AND ADDITIONS BY GENERIC CLASS*

1980-1994



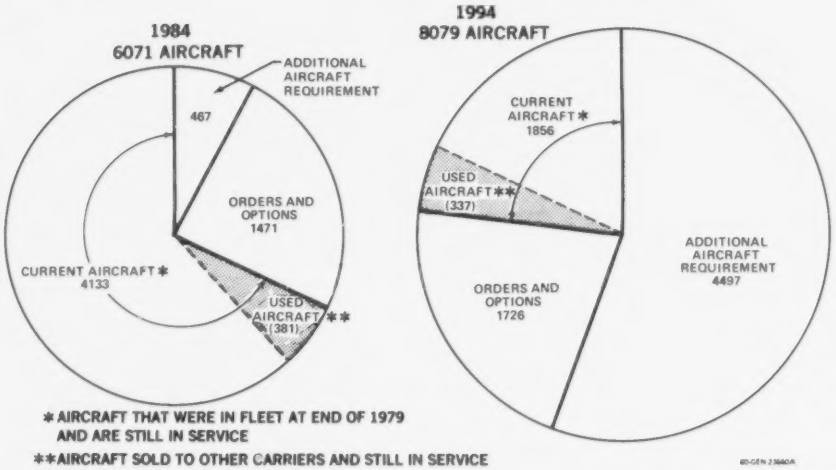
* FEEDER AND NONJET AIRCRAFT NOT INCLUDED

By 1994, 68 percent of the short-range jet aircraft, 37 percent of the medium-range jet aircraft, and 50 percent of the long-range jet aircraft that were in the fleet at the end of 1979 will have been retired permanently. The units that replace these retired aircraft and provide additional capacity for growth tend to reflect the trend towards relatively larger aircraft. As an example, aircraft in the short-range 160-class will increase their share of the total short-range class from 41 percent in 1979 to 75 percent in 1994. Long-range 400-class aircraft will increase their share from 31 percent to 63 percent of the long-range market by 1994.

Orders and options have already been placed for 76 percent of the total units required over the next five years and for almost 30 percent of the units required through 1994. Although a few additional aircraft will be ordered during the next five years, the largest number (90 percent) of additional aircraft required throughout the forecast period will be added to the world's fleets during the decade from 1985 to 1994.

FLEET COMPOSITION FORECAST

(FIRST YEAR = 1980)



*AIRCRAFT THAT WERE IN FLEET AT END OF 1979 AND ARE STILL IN SERVICE

**AIRCRAFT SOLD TO OTHER CARRIERS AND STILL IN SERVICE

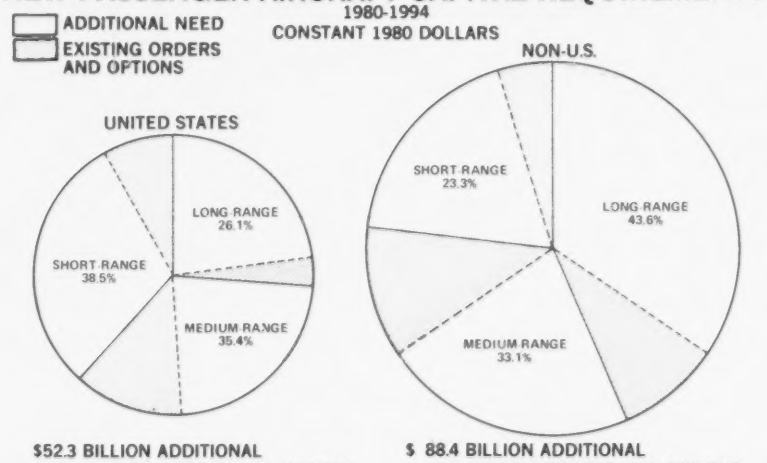
CAPITAL REQUIREMENTS

Over the next 15 years, $186 billion (constant 1980 U.S. dollars) in capital will be needed to purchase the nearly 6100 new passenger jet aircraft that will be required. Additional monies will be needed for spares. Some $46 billion of this total has already been marked as necessary to purchase more than 1700 orders and options currently placed.

The purchase of short- to medium-range aircraft will require 63 percent of the $186 billion, including 18 percent already marked for orders and options.

NEW PASSENGER AIRCRAFT CAPITAL REQUIREMENTS*

1980-1994
CONSTANT 1980 DOLLARS



$52.3 BILLION ADDITIONAL
16.0 BILLION ORDERS AND OPTIONS
$68.3 BILLION TOTAL

$ 88.4 BILLION ADDITIONAL
29.7 BILLION ORDERS AND OPTIONS
$118.1 BILLION TOTAL

*DOES NOT INCLUDE FEEDER/NON-JET AIRCRAFT, BAC-111, F-28, OR RUSSIAN AIRCRAFT

WORLD CARGO TRAFFIC

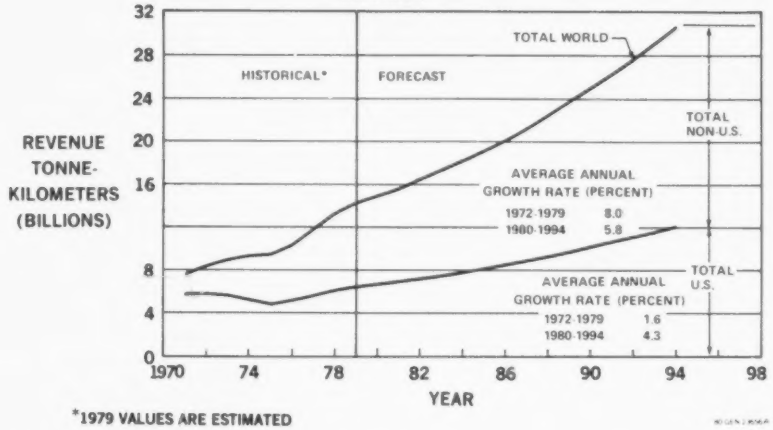
The growth of freight carried by cargo aircraft (all-services cargo) will average slightly more than 5 percent per year throughout the forecast period, producing a 1994 demand of 31 billion RTKs. In addition, passenger belly-pit RTKs forecasted to number 66 billion by 1994 will yield a total cargo market of 97 billion RTKs.

All-services cargo RTKs for U.S. airlines currently represent approximately 44 percent of the world's RTKs, although by 1994 this figure will decline to 39 percent. Coming out of a three-year slump from 1973 to 1975, the U.S. carriers averaged an annual growth of over 8 percent from 1975 to 1978. Both U.S. and non-U.S. all-services cargo RTKs are expected to grow steadily throughout the forecast period, although at a relatively low rate.

Because of the small percentage of total freight (from all transportation modes) carried by air, innovations in the air cargo industry could cause the forecast's modest growth rates to undergo a dramatic shift upwards. Marketing available belly-pit space and efficient small-package delivery are two well-known examples of such recent innovations.

ALL-FREIGHT REVENUE TONNE-KILOMETERS

ALL SERVICES, U.S. AND NON-U.S.
1971-1994



*1979 VALUES ARE ESTIMATED

CAPACITY/FREIGHTER REQUIREMENTS

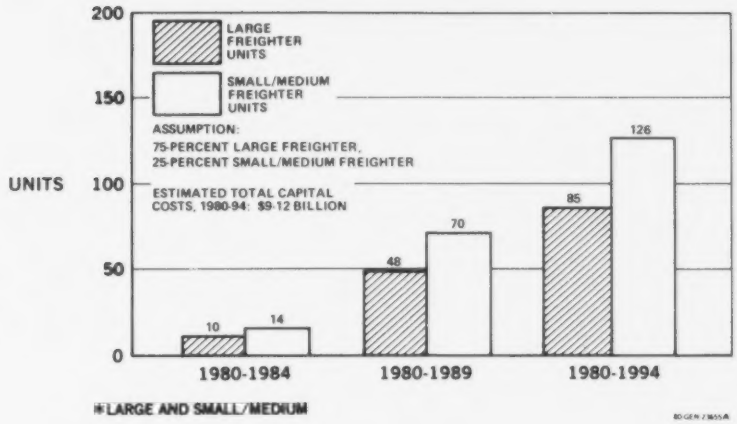
Even when based on the relatively modest forecast growth rates, freight will be an important market for the world's airlines over the next 15 years. By 1994 all-freight capacity needed is expected to be more than double the capacity provided in 1979.

Airlines are continuing to retire B707 and standard-size DC-8 freighter aircraft. However, most DC-8-60 series freighters will be reengined by the early 1980s and will continue in operation throughout the decade. Some additional freighter capacity will be brought into fleets through the conversion of passenger aircraft to freighters during the 1980s.

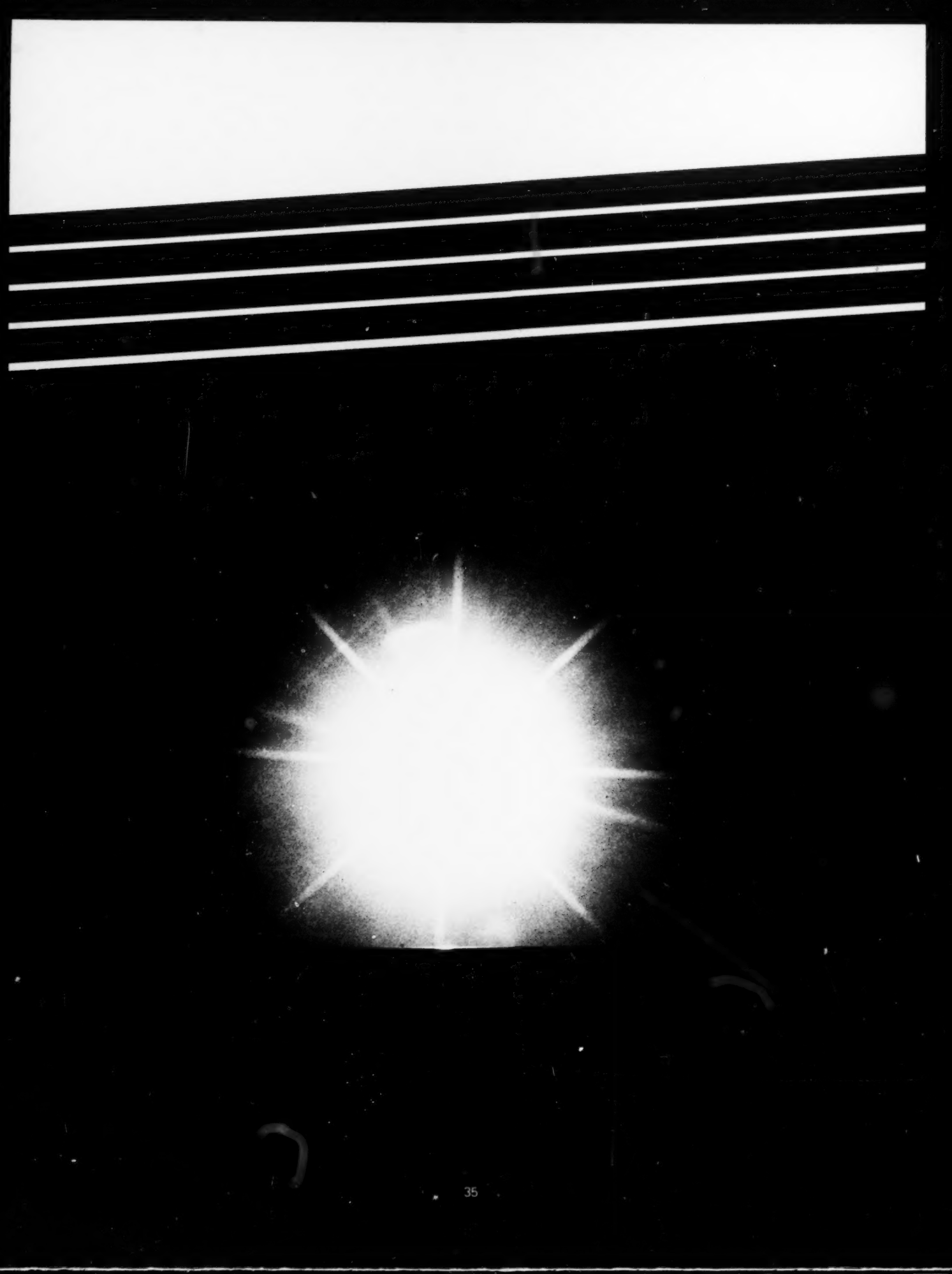
Because of the uncertainties concerning the future of cargo, uncertainties concerning both the size and range of new freighter and convertible freighter aircraft also exist. However, analysis of the extent to which wide-body cargo aircraft currently carry all-freight cargo provided insight into the need for additional cargo aircraft in the future. In constant 1980 U.S. dollars, the capital requirement for these aircraft is between $9 and $12 billion over the next fifteen years.

ALL-FREIGHT

NEW UNIT* REQUIREMENTS



*LARGE AND SMALL/MEDIUM



CONCLUSIONS

The outlook for commercial aircraft sales and airline traffic growth is positive.

- Passenger traffic is expected to increase from 1020 billion RPKs (estimated) in 1979 to 2577 billion in 1994, at an annual RPK growth rate of 6.4 percent.
- Total cargo traffic (both belly-pit and all-freight) should experience even stronger growth from 32 billion (estimated) in 1979 to almost 97 billion by 1994, at an annual rate of 7.7 percent.
- World GNP growth will continue to be strong (3.3 percent per year) over the next 15 years.
- Inflation will continue to be a major concern due to rising energy, labor, and raw material costs.
- Real GNP in the U.S. is expected to fall 1 percent in 1980 and rebound to +2 percent in 1981.
- Traffic growth, together with the retirement of first-generation jet aircraft, will create a market for almost 4500 new passenger aircraft by 1994. This is in addition to 1700 aircraft already ordered or under option.

APPENDIX A
DEFINITIONS

AVAILABLE SEAT-KILOMETERS – The sum of the products obtained by multiplying the number of passenger seats available on each flight stage by the flight stage distance.

CURRENT FLEET – Aircraft on hand as of December 31, 1979.

GENERIC AIRCRAFT – Classes of aircraft types grouped together for purposes of analysis. Aggregation is based on size and range characteristics. The following gives the classification scheme, and the table lists all members of each class.

PASSENGER TYPES:

SHORT-RANGE 110 – Low seating capacity (100-125) with a range up to 1800 nautical miles.

SHORT-RANGE 160 – Seating up to 180 with improved range to 2200 nautical miles.

MEDIUM-RANGE 200 – Primarily a wide-body class with seating capacity to 240 and a range to 2500 nautical miles.

MEDIUM-RANGE 250 – Wide-body class seating up to 270 with a range up to 2500 nautical miles.

LONG-RANGE 270 – A higher-capacity, wide-body class offering 270 to 350 seats with a range up 5500 nautical miles.

LONG-RANGE 400 – High capacity, wide-body class with seat capacity around 400 and with range up to 5500 nautical miles.

PASSENGER JET AIRCRAFT BY GENERIC CLASS

SHORT-RANGE 110		SHORT-RANGE 160
BAC-1-11-200	DC-9-30	ATMR
BAC-1-11-300	DC-9-30CF	BAC-1-11-475
BAC-1-11-400	DC-9-30RC	BAC-1-11-500
B737-100	DC-9-40	B727-100
B737-200	DC-9-50	B727-100C
B737-200C	DC-9-80SF	B727-100QC
B737-200QC	F-28-1000	B727-200
CARAVELLE 3	F-28-2000	B757-100
CARAVELLE 6N	F-28-3000	B757-200
CARAVELLE 6R	F-28-4000	DC-9 SUPER 80
CARAVELLE 10B	MERCURE	
CARAVELLE 10R	TRIDENT 1C	
CARAVELLE 11R	TRIDENT 1E	
CARAVELLE 12B	TRIDENT 2E	
DC-9-10	TRIDENT 3B	
DC-9-10MC	TU-104	
DC-9-10RC	TU-134	
DC-9-20	YAK-40	

MEDIUM-RANGE 200	
A310-100	COMET 4
A310-200	COMET 4B
B707-120	COMET 4C
B707-120B	CV-880
B707-138	CV-990A
B707-138B	DC-8-20
B707-220	DC-8-30
B720	DC-8-40
B720B	SUPER VC-10
B767-100	TU-154
B767-200	VC-10

MEDIUM-RANGE 250
A300B-1
A300B-2
A300B-2K
A-300B-4
DC-8-61
DC-8-61CF
DC-10-10
DC-10-10CF
DC-10-15
L-1011-1
L-1011-100
L-1011-200

LONG-RANGE 270	
B707-320	DC-8-50CF
B707-320B	DC-8-62
B707-320C	DC-8-62CF
B707-420	DC-8-63
B747-SP	DC-8-63CF
CONCORDE	DC-8-63PF
DC-10-30	IL-62
DC-10-30CF	IL-82
DC-10-40	L-1011-500
DC-8-50	

LONG-RANGE 400
B747-100
B747-100RF
B747-100SR
B747-200
B747-200C
B747-200R
B747-200SCD
B747-300B
B747-300SCD
DC-10 STRETCH

CARGO TYPES (including convertible freighters):

SMALL FREIGHTER – A small-sized cargo aircraft (113 cubic meters, 4000 cubic feet) with a range of 2500 nautical miles and a capacity lift of up to 22 metric tons (20 tons). Includes proposed ATMR, B727, B757, and DC-9 Super 80 class aircraft.

MEDIUM FREIGHTER – A medium-sized cargo aircraft (425 cubic meters, 15,000 cubic feet) with a range of 3500 nautical miles and a capacity lift of up to 45 metric tons (41 tons). Includes A300, B767, and DC-10CF class aircraft.

LARGE AIRCRAFT – A large-sized cargo aircraft (670 cubic meters, 24,000 feet) with a range of 4500 nautical miles and a capacity lift of up to 95 metric tons (86 tons). Includes B747 and proposed DC-10 Stretch class aircraft.

NONSCHEDULED FLIGHTS (Revenue) – Charter flights and special flights performed for remuneration on an irregular basis, including empty flights related thereto and "inclusive tours" other than those reported under scheduled services.

REVENUE TONNE- (METRIC TON) KILOMETERS – The sum of the products obtained by multiplying the number of revenue load metric tons carried on each flight stage by the flight stage distance.

REVENUE PASSENGER-KILOMETERS FLOWN – The sum of the products obtained by multiplying the number of revenue passengers carried on each flight stage by the flight stage distance.

REVENUE PASSENGER LOAD FACTOR – Revenue passenger-kilometers expressed as a percentage of available seat-kilometers.

ROUTE/AREA DEFINITIONS – These definitions are drawn from the IATA standards.

NORTH AMERICA – Canada and the United States, including Hawaii and Alaska but excluding the Canal Zone, Puerto Rico, and the Virgin Islands.

CENTRAL AMERICA – The Bahamas, Bermuda, Belize, the Canal Zone, Costa Rica, El Salvador, Guatemala, Honduras, the Islands of the Caribbean Sea (including Puerto Rico, Antilles, and the Virgin Islands), Mexico, Nicaragua, and Panama.

SOUTH AMERICA – Argentina, Bolivia, Brazil, Columbia, Chile, Ecuador, Falkland Islands, French Guyana, Guyana, Paraguay, Peru, Surinam, Uruguay, and Venezuela.

NORTH ATLANTIC – Any route between Europe, Africa, or the Middle East, and the Western Hemisphere north of the Mid- Atlantic routes.

MID-ATLANTIC – Any route between Europe, Africa, or the Middle East, and the Western Hemisphere via either Bermuda, Nassau, Miami, Havana, or any gateway south thereof but north of Rio de Janeiro (Miami will be included in the North Atlantic in 1979).

SOUTH ATLANTIC – Any route between Europe, Africa, or the Middle East, and the Western Hemisphere south of the Mid- Atlantic routes as previously defined.

EUROPE – Geographical Europe and Algeria, the Azores, the Canary Islands, Madeira, Morocco, Tunisia, and Turkey.

NORTH AFRICA – The part of Africa north of the Equator, but excluding those areas mentioned in Europe and the Middle East.

SOUTHERN AFRICA – The part of Africa south of the Equator.

MIDDLE EAST – Bahrein, Cyprus, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, the People's Republic of Southern Yemen, Sudan, Syria, United Arab Emirates, and Yemen.

FAR EAST AND AUSTRALASIA – IATA Traffic Conference Area 3.

NORTH AND MID-PACIFIC – Any route between points in Conference Area 1 and points in Conference Area 3 (except Australasia) via the North and Central Pacific Ocean.

SOUTH PACIFIC – Any routes between points in Conference Area 1 and points in Australasia via the South Pacific Ocean.

Traffic Conference No. 1 encompasses all of the North and South American continents and the islands adjacent thereto: Greenland, Bermuda, the West Indies, the Islands of the Caribbean Sea, and the Hawaiian Islands, including Midway and Palmyra.

Traffic Conference No 2. encompasses all of Europe including that part of the Union of Soviet Socialist Republics in Europe, the islands adjacent thereto, Iceland, the Azores, all of Africa and the islands adjacent thereto, Ascension Island, and that part of Asia lying west of and including Iran.

Traffic Conference No. 3 encompasses all of Asia and the islands thereto except that portion included in Traffic Conference No. 2; all of the East Indies, Australia, New Zealand, and the islands adjacent thereto; the islands of the Pacific Ocean except those included in Traffic Conference No. 1.

SCHEDULED SERVICES (Revenue) – Scheduled flights which are open to use by the public and are performed according to a published timetable, or so regularly or frequently as to constitute a recognizably systematic series; extra flights occasioned by overflow traffic from the scheduled flights; and preparatory revenue flights on planned air services.

APPENDIX B

IATA INTERREGIONAL AND INTRAREGIONAL TRAFFIC FORECASTS (SCHEDULED INTERNATIONAL DATA)

WORLD AIR TRAFFIC FORECAST

PERCENT CHANGE

YEAR	WORLD	ATLANTIC ROUTES	EUROPEAN ROUTES	AMERICAN ROUTES	INTRAREGIONAL
1978	15.908	22.861	10.410	19.496	15.768
1979	10.985	13.450	8.739	15.850	9.633
1980	2.646	6.002	6.041	8.137	5.267
1981	7.243	6.693	8.726	8.998	8.314
1982	7.121	7.364	9.632	9.069	8.318
1983	6.152	6.753	9.525	9.292	8.740
1984	6.073	6.457	9.054	8.662	8.242
1985	6.648	7.500	9.554	9.018	8.175
1986	6.641	7.775	9.495	8.759	8.297
1987	6.808	7.686	9.485	8.483	8.239
1988	6.836	6.987	9.506	8.719	8.065
1989	7.000	7.562	9.638	8.722	8.330
1990	7.098	7.675	9.843	8.809	8.396
1991	6.800	7.071	8.908	8.344	8.105
1992	6.698	6.716	8.572	8.192	8.110
1993	6.609	6.621	8.587	7.871	7.660
1994	6.560	6.555	8.508	7.754	7.447
1995	6.439	6.206	8.162	7.572	7.413
1996	6.387	6.151	8.132	7.374	7.206
1997	6.386	5.730	8.147	7.135	7.164
1998	6.365	5.672	8.522	7.136	6.986
1999	6.368	5.682	8.533	7.137	6.938
2000	6.309	5.692	8.131	7.138	6.946

80-GEN-24577

WORLD AIR TRAFFIC FORECAST

1979-2000

MILLIONS OF RPK'S

	ATLANTIC			EUROPE			
YEAR	N. ATLANTIC	S. ATLANTIC	MID-ATLANTIC	EUROPE-N. AFRICA	EUROPE-S. AFRICA	EUROPE-MIDEAST	EUROPE-FAR EAST
1977	67,135	7,607	11,022	8,600	12,654	19,583	49,117
1978	82,707	8,807	12,999	9,543	14,989	22,731	52,055
1979	94,386	10,009	14,176	10,583	16,137	24,469	56,809
1980	99,596	10,923	15,168	11,496	16,774	26,300	59,952
1981	105,303	12,140	16,656	12,738	17,655	28,480	65,642
1982	111,842	13,702	18,430	14,229	18,548	30,670	72,953
1983	118,383	15,094	20,218	15,785	19,768	33,088	80,871
1984	124,458	17,124	22,039	17,469	20,825	35,425	89,329
1985	132,772	19,109	24,012	19,378	21,844	38,090	99,313
1986	142,039	21,346	26,182	21,182	22,951	40,983	110,470
1987	151,953	23,583	28,602	23,321	24,140	43,650	123,025
1988	161,268	26,109	31,024	25,556	25,287	47,413	136,238
1989	172,492	28,636	33,789	27,873	26,576	51,073	151,569
1990	184,688	31,397	36,863	30,312	27,953	55,085	169,047
1991	196,692	34,144	39,997	32,965	29,420	59,217	185,952
1992	208,494	37,132	43,396	35,602	31,038	63,658	203,617
1993	221,003	40,288	46,868	38,450	32,746	68,432	222,961
1994	234,264	43,713	50,383	41,526	34,547	73,222	244,142
1995	247,148	47,428	54,162	44,640	36,447	78,348	266,115
1996	260,741	51,222	58,224	47,988	38,269	83,832	290,065
1997	273,778	55,320	62,300	51,588	40,182	89,701	316,171
1998	287,467	59,469	66,661	55,457	42,192	97,774	344,626
1999	301,841	63,929	71,327	59,616	44,301	106,573	375,643
2000	316,933	68,724	76,320	63,789	46,516	114,034	409,450

80-GEN-24576

WORLD AIR TRAFFIC FORECAST

1979-2000

MILLIONS OF RPK'S

	NORTH AMERICA					DOMESTIC	
YEAR	N. AMERICA-C. AMERICA	N. AMERICA-S. AMERICA	NORTH AND MID-PACIFIC	SOUTH PACIFIC	OTHER	U.S. DOMESTIC	OTHER DOMESTIC
1977	14,353	10,477	23,832	6,591	3,190	264,000	111,600
1978	16,517	11,651	29,968	7,063	4,638	306,200	127,000
1979	18,507	13,364	34,867	9,087	5,081	340,640	137,600
1980	19,458	14,125	37,942	10,313	5,650	330,260	146,000
1981	21,286	15,486	40,872	11,343	6,375	354,220	152,900
1982	23,646	16,937	43,827	12,510	7,032	375,560	161,100
1983	26,042	18,596	47,452	13,808	7,714	388,040	169,800
1984	28,541	20,216	51,148	15,120	8,427	401,700	179,200
1985	31,524	22,163	55,189	16,457	9,254	420,900	187,400
1986	34,450	24,151	59,858	17,887	10,029	439,620	196,600
1987	37,540	26,291	64,647	19,407	10,907	460,420	207,400
1988	41,065	28,597	69,883	21,082	12,011	483,441	218,807
1989	44,695	31,219	75,739	22,946	13,095	507,613	230,841
1990	48,860	33,876	82,200	24,983	14,309	532,994	243,538
1991	53,136	36,653	88,776	27,107	15,597	559,643	256,932
1992	57,519	39,586	95,878	29,411	17,001	587,626	271,064
1993	61,121	42,753	103,069	31,764	18,531	617,007	285,972
1994	67,090	45,959	110,799	34,305	20,106	647,857	301,700
1995	72,122	49,406	119,109	36,878	21,815	680,250	318,294
1996	77,531	53,111	127,446	39,643	23,670	714,263	335,800
1997	82,959	56,829	136,367	42,617	25,563	749,976	354,269
1998	88,766	60,807	145,913	45,813	27,608	787,474	373,754
1999	94,979	65,064	156,127	49,249	29,817	826,848	394,310
2000	101,628	69,618	167,056	52,942	32,202	868,191	415,998

80-GEN-24575

WORLD AIR TRAFFIC FORECAST

1979-2000

MILLIONS OF RPK'S

	INTRA FLOWS						
YEAR	INTRA N. AMERICA	INTRA C. AMERICA	INTRA S. AMERICA	INTRA EUROPEAN	INTRA AFRICA	INTRA MIDEAST	INTRA FAR EAST
1977	8,419	338	2,029	37,070	2,077	2,752	23,857
1978	8,499	467	2,385	39,856	2,188	6,074	29,142
1979	9,377	536	2,648	43,053	2,308	7,020	32,204
1980	9,941	604	2,950	44,288	2,524	7,875	34,072
1981	10,731	671	3,311	47,637	2,799	9,012	36,604
1982	11,487	779	3,708	51,381	3,078	10,330	39,206
1983	12,252	886	4,174	55,759	3,333	11,794	42,257
1984	13,034	970	4,616	60,058	3,617	13,225	45,688
1985	13,984	1073	5,172	64,454	3,925	14,613	49,530
1986	15,060	1181	5,751	69,281	4,326	16,140	53,686
1987	16,135	1300	6,348	74,678	4,798	58,163	58,163
1988	17,313	1433	7,039	80,175	5,233	19,243	63,061
1989	18,589	1566	7,756	86,292	5,747	21,231	68,433
1990	19,942	1711	8,535	93,057	6,354	23,260	74,353
1991	21,338	1864	9,346	100,037	6,958	25,412	80,673
1992	22,832	2032	10,234	107,530	7,619	27,763	87,530
1993	24,316	2215	11,155	115,067	8,343	30,261	94,533
1994	25,896	2403	12,158	122,547	9,004	32,985	102,095
1995	27,450	2608	13,254	130,512	9,912	35,953	110,263
1996	29,097	2829	14,380	138,343	10,804	39,180	119,084
1997	30,843	3070	15,602	146,643	11,777	42,520	128,611
1998	32,693	3316	16,929	155,442	12,778	46,134	138,256
1999	34,655	3581	18,368	164,768	13,864	49,825	148,626
2000	36,734	3867	19,929	174,655	15,042	53,811	159,772

80-GEN-24578

APPENDIX C
INDIVIDUAL AIRLINES STUDIED

UNITED STATES (36)

TRUNK CARRIERS

AMERICAN AIRLINES
BRANIFF AIRWAYS
CONTINENTAL AIRLINES
DELTA AIRLINES
EASTERN AIRLINES
NATIONAL AIRLINES
NORTHWEST ORIENT AIRLINES
PAN AMERICAN WORLD AIRWAYS
TRANS WORLD AIRLINES
UNITED AIRLINES
WESTERN AIRLINES

CARGO CARRIERS

AIRLIFT INTERNATIONAL
FLYING TIGER LINE
SEABOARD WORLD AIRLINES

LOCAL CARRIERS

FRONTIER AIRLINES
HUGHES AIRWEST
OZARK AIR LINES
PIEDMONT AVIATION
REPUBLIC AIRLINES
TEXAS INTERNATIONAL AIRLINES
USAIR

U.S. OTHER

AIR CALIFORNIA
AIR FLORIDA
AIR NEW ENGLAND
ALASKA AIRLINES
ALOHA AIRLINES
HAWAIIAN AIRLINES
PACIFIC SOUTHWEST AIRLINES
REEVE ALEUTIAN AIRWAYS
SOUTHWEST AIRLINES
WIEN AIR ALASKA

U.S. SUPPLEMENTALS

CAPITOL INTERNATIONAL AIRWAYS
EVERGREEN INTERNATIONAL AIRLINES
OVERSEAS NATIONAL AIRWAYS (historical only; not included in forecast)
TRANSAMERICA AIRLINES
WORLD AIRWAYS

CANADA (8)

AIR CANADA
CP AIR
EASTERN PROVINCIAL AIRWAYS
NORDAIR
PACIFIC WESTERN AIRLINES
QUEBECAIR
TRANSAIR
WARDAIR CANADA

EUROPE (59)

SCHEDULED

AER LINGUS
AIR ANGLIA
AIR FRANCE
AIR INTER
AIR MALTA
ALISARDA
ALITALIA
A.T.I.
AUSTRIAN AIRLINES
AVIACO
BRAATHENS
BRITISH AIRWAYS
BRITISH CALEDONIAN AIRWAYS
BRITISH ISLAND AIRWAYS
CSA (Czechoslovak Airlines)
FINNAIR
IBERIA
ICELANDAIR (Flugfelag)
ITAVIA
JAT
KLM
LINJEFLYG AB
LOFTLEIDIR ICELANDIC
LOT (Polish Airlines)
LUFTHANSA GERMAN AIRLINES
LUXAIR
MALEV
OLYMPIC AIRWAYS
SABENA
SAS
SWISSAIR
TAP
TAROM (Romanian Air Transport)
THY (Turk Hava Yollari)
U.T.A.

EUROPE

NONSCHEDULED

BALAIR
BRITANNIA AIRWAYS
BRITISH MIDLAND AIRWAYS (some scheduled)
CARGOLUX AIRLINES INTERNATIONAL (cargo only)
CONAIR A/S
CONDOR
DAN-AIR SERVICES, LTD (some scheduled)
HAPAG-LLOYD
INEX ADRIA AIRWAYS
KAR-AIR (some scheduled)
LAKER AIRWAYS (some scheduled)
LTU
MAERSK AIR
MARTINAIR
MONARCH AIRLINES
SCANAIR
SOBELAIR
SPANTAX
STERLING AIRWAYS
TRANS EUROPA
TRANSAIR SWEDEN
TRANSAVIA
TRANS EUROPEAN AIRWAYS
TRANSMERIDIAN AIR CARGO

LATIN AMERICA (35)

AEROCONDOR
AEROLINEAS ARGENTINAS
AEROMEXICO
AEROPERU
AIR JAMAICA
AIR PANAMA INTERNATIONAL
ALM
AUSTRAL
AVENSA
AVIANCA
AVIATECA
BAHAMASAIR
BRITISH WEST INDIAN AIRWAYS
COPA
CRUZEIRO
CUBANA
DOMINICANA
ECUATORIANA
FAUCETT
LAB (Lloyd Aereo Boliviano)
LACSA
LADECO
LAN-CHILE AIRLINES
LAV (Linea Aeropostal Venezolana)

LATIN AMERICA (Continued)

MEXICANA
PLUNA
SAHSA
SAM
SURINAM
TACA
TAN AIRLINES
TRANSBRASIL
VARIG
VASP
VIASA

MIDDLE EAST (18)

ALIA (Royal Jordanian Airlines)
ARIANA AFGHAN AIRLINES
ARKIA
BANGLADESH BIMAN
CYPRUS AIRWAYS
EGYPTAIR
EL AL (Israel Airlines)
GULF AIR
IRAN AIR
IRAQI AIRWAYS
KUWAIT AIRWAYS
M.E.A.
PAKISTAN INTERNATIONAL AIRLINES
SAUDI ARABIAN AIRLINES
SUDAN AIRWAYS
SYRIAN ARAB AIRLINES
TMA (Trans Mediterranean Airways — cargo only)
YEMEN AIRWAYS

AFRICA (20)

AIR AFRIQUE
AIR ALGERIE
AIR MADAGASCAR
AIR MALAWI
AIR MALI
AIR TANZANIA
AIR ZAIRE
AIR ZIMBABWE
CAMEROON
DETA
ETHIOPIAN AIRLINES
GHANA AIRWAYS
KENYA AIRWAYS
LIBYAN ARAB AIRLINES
NIGERIA AIRWAYS
ROYAL AIR MAROC
SOUTH AFRICAN AIRWAYS

AFRICA (Continued)

TAAG (Angola Airlines)
TUNIS AIR
ZAMBIA AIRWAYS

ASIA AND PACIFIC (29)

AIR-INDIA
AIR LANKA
AIR NEW ZEALAND
AIR NIUGINI
AIR PACIFIC
ALL NIPPON AIRWAYS
ANSETT AIRLINES
BOURAQ INDONESIAN AIRLINES
CATHAY PACIFIC AIRWAYS
CHINA AIRLINES
EAST-WEST AIRLINES
GARUDA INDONESIAN AIRWAYS
INDIAN AIRLINES
JAL (Japan Air Lines)
JAPAN ASIA AIRWAYS
KOREAN AIRLINES
MACROBERTSON MILLER AIRLINES
MALAYSIAN AIRLINE SYSTEM
MERPATI NUSANTARA AIRLINES
PHILIPPINE AIRLINES
POLYNESIAN AIRLINES
QANTAS AIRWAYS
ROYAL NEPAL AIRLINES
SINGAPORE AIRLINES
SOUTHWEST (Japan)
TAA
TDA (TOA Domestic Airlines)
THAI AIRWAYS (Domestic)
THAI AIRWAYS INTERNATIONAL

204 AIRLINES FORECAST (ONA historical data only)

APPENDIX D

TRAFFIC AND CAPACITY DETAIL

PASSENGER TRAFFIC HISTORY AND FORECAST

TOTAL WORLD

TOTAL REPORT (RPK'S AND ASK'S IN BILLIONS)

	SCHEDULED SERVICE					NONSCHEDULED SERVICE					ALL SERVICES				
YEAR	RPK'S	ANNUAL GROWTH RATE (RPK)	ASK'S	ANNUAL GROWTH RATE (ASK)	LOAD FACTOR	RPK'S	ANNUAL GROWTH RATE (RPK)	ASK'S	ANNUAL GROWTH RATE (ASK)	LOAD FACTOR	RPK'S	ANNUAL GROWTH RATE (RPK)	ASK'S	ANNUAL GROWTH RATE (ASK)	LOAD FACTOR
1971	390.6	0.0	771.0	0.0	50.6	64.1	0.0	85.8	0.0	74.6	454.6	0.0	856.8	0.0	53.0
1972	452.2	15.7	835.6	8.3	54.1	71.6	11.8	111.0	29.3	64.5	523.8	15.2	946.6	10.4	55.3
1973	519.2	14.8	939.2	12.3	55.2	83.7	16.8	111.8	0.6	74.9	602.9	15.1	1050.9	11.0	57.3
1974	547.7	5.4	964.3	2.6	56.7	91.5	9.2	119.0	6.4	76.8	639.2	6.0	1083.3	3.0	59.0
1975	573.6	4.7	1020.7	5.8	56.1	100.0	9.2	136.4	14.6	73.3	673.6	5.3	1157.1	6.8	58.2
1976	633.0	10.3	1100.7	7.8	57.5	104.0	3.9	143.7	5.3	72.3	737.0	9.4	1244.4	7.5	59.2
1977	697.0	10.1	1186.8	7.8	58.7	112.5	8.1	147.0	2.3	76.4	809.4	9.8	1333.8	7.1	60.6
1978	803.8	15.3	1289.4	8.6	62.3	116.9	3.9	148.7	1.8	78.0	920.7	13.7	1439.1	7.8	63.9
1979*	902.1	12.2	1430.1	10.9	63.0	117.8	0.7	155.9	4.1	75.5	1019.9	10.7	1586.1	10.2	64.3
1980**	941.2	4.3	1523.0	6.4	61.7	127.4	8.1	166.3	6.6	76.5	1068.6	4.7	1689.3	6.5	63.2
1981	1014.2	7.7	1623.0	6.5	62.4	138.0	8.3	179.1	7.7	77.0	1152.2	7.8	1802.1	6.6	63.9
1982	1088.1	7.2	1721.8	6.0	63.1	147.1	6.5	190.3	6.2	77.2	1235.2	7.2	1912.1	6.1	64.5
1983	1159.0	6.5	1827.3	6.1	63.4	155.7	5.8	201.7	6.0	77.2	1314.8	6.4	2029.0	6.1	64.7
1984	1233.7	6.4	1929.2	5.5	63.9	164.9	5.8	213.4	5.7	77.2	1398.6	6.3	2142.6	5.5	65.2
1985	1315.7	6.6	2041.4	5.8	64.4	174.6	5.8	226.0	5.9	77.2	1490.3	6.5	2267.5	5.8	65.7
1986	1405.5	6.8	2166.6	6.1	64.8	184.9	5.9	239.0	5.7	77.3	1590.4	6.7	2405.5	6.0	66.1
1987	1494.5	6.3	2281.4	5.3	65.5	195.4	5.6	251.8	5.3	77.5	1689.9	6.2	2533.2	5.3	66.7
1988	1503.2	6.5	2414.4	5.8	65.9	206.6	5.7	265.1	5.2	77.9	1799.8	6.4	2679.5	5.7	67.1
1989	1690.6	6.1	2559.3	6.0	66.0	218.3	5.6	278.5	5.0	78.4	1908.9	6.0	2837.8	5.9	67.2
1990	1798.5	6.3	2712.8	5.9	66.2	230.0	5.3	291.9	4.8	78.7	2028.5	6.2	3004.7	5.8	67.5
1991	1911.9	6.3	2882.1	6.2	66.3	242.2	5.2	307.3	5.2	78.7	2154.1	6.1	3189.4	6.1	67.5
1992	2031.8	6.2	3062.6	6.2	66.3	255.1	5.3	324.0	5.4	78.7	2286.9	6.1	3386.6	6.1	67.5
1993	2159.0	6.2	3254.6	6.2	66.3	268.8	5.3	341.6	5.4	78.6	2427.8	6.1	3596.2	6.1	67.5
1994	2293.8	6.2	3458.0	6.2	66.3	283.4	5.4	360.4	5.5	78.6	2577.1	6.1	3818.4	6.1	67.4

*1979 NON-U.S. DATA ARE ESTIMATED

**FORECAST BEGINS IN 1980

80-GEN-23733

PASSENGER TRAFFIC HISTORY AND FORECAST

TOTAL U. S.

TOTAL REPORT (RPK'S AND ASK'S IN BILLIONS)

	SCHEDULED SERVICE					NONSCHEDULED SERVICE					ALL SERVICES				
YEAR	RPK'S	ANNUAL GROWTH RATE (RPK)	ASK'S	ANNUAL GROWTH RATE (ASK)	LOAD FACTOR	RPK'S	ANNUAL GROWTH RATE (RPK)	ASK'S	ANNUAL GROWTH RATE (ASK)	LOAD FACTOR	RPK'S	ANNUAL GROWTH RATE (RPK)	ASK'S	ANNUAL GROWTH RATE (ASK)	LOAD FACTOR
1971	217.7	0.0	440.6	0.0	49.7	34.1	0.0	40.9	0.0	83.3	251.8	0.0	487.6	0.0	51.6
1972	246.4	13.2	463.4	3.7	53.1	31.9	-6.6	38.1	-7.0	83.6	278.3	10.5	501.5	2.8	55.5
1973	264.6	7.3	505.9	9.1	52.3	35.6	11.7	43.6	14.3	81.7	300.2	7.8	549.5	9.5	54.6
1974	266.9	0.8	484.5	-4.3	55.0	33.3	-6.8	43.7	0.3	76.0	300.2	-0.1	528.3	-3.9	56.8
1975	257.6	0.2	494.7	2.0	54.1	30.7	-7.7	38.5	-11.9	79.6	298.3	-0.7	533.2	0.9	55.9
1976	293.9	9.8	527.3	6.5	55.7	33.7	9.7	42.0	8.9	80.2	327.6	9.8	569.3	6.7	57.5
1977	317.8	8.1	565.4	7.2	56.2	36.6	8.5	45.1	7.4	81.0	354.4	8.10	610.5	7.2	58.0
1978	372.2	17.1	604.9	6.9	61.5	34.0	-7.2	41.2	-8.7	82.4	406.1	14.6	646.1	5.8	62.8
1979	421.9	13.3	669.8	10.7	62.9	27.7	-18.5	33.1	-19.8	83.7	449.6	10.6	702.9	8.7	63.9
1980*	413.9	-2.0	687.9	2.6	60.1	28.8	4.0	34.7	4.8	83.0	442.7	-1.6	722.6	2.7	61.2
1981	436.5	5.4	706.4	2.6	61.7	31.5	9.4	38.4	10.7	82.0	468.0	5.7	744.8	3.0	62.8
1982	461.1	5.6	725.2	2.6	63.5	33.5	6.3	40.8	6.3	82.1	494.7	5.6	766.0	2.8	64.5
1983	482.5	4.6	754.3	4.0	63.9	35.3	5.1	43.0	5.2	81.9	517.8	4.6	797.3	4.0	64.9
1984	506.1	4.8	780.3	3.4	64.8	37.1	5.1	45.3	5.3	81.8	543.2	4.9	825.6	3.5	65.7
1985	533.5	5.4	812.1	4.0	65.6	39.0	5.2	47.7	5.3	81.7	572.5	5.3	859.8	4.1	66.5
1986	565.2	5.9	851.5	4.8	66.3	41.1	5.3	50.3	5.4	81.6	606.3	5.9	901.8	4.8	67.2
1987	592.1	4.7	886.0	4.0	66.8	43.3	5.3	53.1	5.4	81.6	635.5	4.8	939.1	4.1	67.6
1988	624.0	5.3	925.8	4.4	67.4	45.7	5.4	55.7	4.9	82.0	669.7	5.3	981.5	4.5	68.2
1989	655.1	4.9	970.5	4.8	67.5	48.2	5.4	58.8	5.4	81.9	703.3	5.0	1029.3	4.8	68.3
1990	692.4	5.6	1022.9	5.3	67.6	50.8	5.4	62.0	5.5	81.9	743.2	5.6	1084.9	5.4	68.5
1991	731.0	5.5	1079.9	5.5	67.6	53.6	5.5	65.5	5.5	81.9	784.6	5.5	1145.3	5.5	68.5
1992	771.2	5.5	1139.0	5.4	67.7	56.6	5.5	69.1	5.6	81.8	827.8	5.5	1208.1	5.4	68.5
1993	813.3	5.4	1200.7	5.4	67.7	59.8	5.6	73.0	5.6	81.8	873.1	5.4	1273.7	5.4	68.5
1994	856.9	5.3	1264.6	5.3	67.7	63.2	5.7	77.2	5.7	81.8	920.1	5.3	1341.9	5.3	68.5

*FORECAST BEGINS IN 1980

80-GEN-23732

PASSENGER TRAFFIC HISTORY AND FORECAST

U. S. TRUNK

TOTAL REPORT (RPK'S AND ASK'S IN BILLIONS)

	SCHEDULED SERVICE					NONSCHEDULED SERVICE					ALL SERVICES				
YEAR	RPK'S	ANNUAL GROWTH RATE (RPK)	ASK'S	ANNUAL GROWTH RATE (ASK)	LOAD FACTOR	RPK'S	ANNUAL GROWTH RATE (RPK)	ASK'S	ANNUAL GROWTH RATE (ASK)	LOAD FACTOR	RPK'S	ANNUAL GROWTH RATE (RPK)	ASK'S	ANNUAL GROWTH RATE (ASK)	LOAD FACTOR
1971	201.0	0.0	412.2	0.0	48.7	16.9	0.0	19.9	0.0	85.1	218.0	0.0	432.1	0.0	50.4
1972	227.1	12.9	426.0	3.3	53.3	16.0	-5.7	18.8	-5.7	85.1	243.1	11.5	444.8	2.9	54.6
1973	242.9	6.9	463.9	8.8	52.3	18.1	13.0	21.2	12.8	85.3	261.0	7.3	485.0	9.0	53.8
1974	243.2	0.0	441.1	-4.9	55.1	16.3	-9.7	19.2	-9.3	85.0	259.5	-0.6	460.4	-5.1	56.3
1975	243.3	0.0	449.9	1.9	54.0	14.7	-9.9	18.2	-5.6	81.1	258.0	-0.6	468.1	1.6	55.1
1976	266.6	9.5	478.2	6.2	56.7	18.4	25.0	22.5	23.9	81.9	285.0	10.4	500.6	6.9	56.9
1977	287.1	7.6	511.0	6.8	56.1	18.1	-1.8	21.6	-4.0	83.7	305.2	7.0	532.6	6.3	57.3
1978	335.2	16.7	543.0	6.2	61.7	13.0	-28.4	15.5	-28.3	83.7	348.1	14.0	558.5	4.8	62.3
1979	375.9	12.1	593.7	9.3	63.3	8.9	-31.1	10.7	-31.1	83.6	384.8	10.5	604.4	8.2	63.6
1980*	366.2	-2.6	606.5	2.1	60.3	8.8	-2.1	10.6	-1.2	82.8	375.0	-2.6	617.1	2.0	60.7
1981	385.5	5.2	622.2	2.5	61.9	8.7	-0.8	10.5	-0.2	82.3	394.2	5.1	632.7	2.5	62.3
1982	406.4	5.4	635.9	2.2	63.9	9.1	4.3	11.0	4.4	82.3	415.5	5.3	646.9	2.2	64.2
1983	424.3	4.4	659.9	3.7	64.2	9.5	4.5	11.5	4.6	82.2	433.8	4.4	671.4	3.7	64.6
1984	444.4	4.7	681.1	3.2	65.2	9.9	4.8	12.1	4.7	82.2	454.3	4.7	693.2	3.2	65.5
1985	467.9	5.2	708.1	3.9	66.0	10.4	4.8	12.7	4.8	82.1	478.3	5.2	720.8	3.9	66.3
1986	495.6	5.9	742.5	4.8	66.7	10.9	4.9	13.3	5.0	82.1	506.5	5.8	755.8	4.8	67.0
1987	518.8	4.6	772.3	4.0	67.1	11.5	5.1	14.0	5.1	82.0	530.3	4.6	786.3	4.0	67.4
1988	546.6	5.3	807.2	4.5	67.7	12.1	5.2	14.7	5.2	82.0	558.7	5.3	821.9	4.5	67.9
1989	573.3	4.8	846.0	4.8	67.7	12.7	5.3	15.5	5.4	82.0	586.0	4.8	861.6	4.8	68.0
1990	606.2	5.7	893.0	5.5	67.8	13.4	5.5	16.4	5.5	81.9	619.6	5.7	909.4	5.5	68.1
1991	640.1	5.5	942.6	5.5	67.9	14.2	5.6	17.3	5.6	81.9	654.3	5.5	959.9	5.5	68.1
1992	675.5	5.5	994.4	5.4	67.9	15.0	5.8	18.3	5.8	81.9	690.5	5.5	1012.7	5.4	68.1
1993	712.4	5.4	1048.4	5.4	67.9	15.9	5.9	19.4	5.9	81.5	728.3	5.4	1067.8	5.4	68.2
1994	750.8	5.3	1104.4	5.3	67.9	16.9	6.0	20.6	6.0	81.9	767.6	5.3	1125.0	5.3	68.2

*FORECAST BEGINS IN 1980

80-GEN-23734

PASSENGER TRAFFIC HISTORY AND FORECAST

LOCAL

TOTAL REPORT (RPK'S AND ASK'S IN BILLIONS)

	SCHEDULED SERVICE					NONSCHEDULED SERVICE					ALL SERVICES				
YEAR	RPK'S	ANNUAL GROWTH RATE (RPK)	ASK'S	ANNUAL GROWTH RATE (ASK)	LOAD FACTOR	RPK'S	ANNUAL GROWTH RATE (RPK)	ASK'S	ANNUAL GROWTH RATE (ASK)	LOAD FACTOR	RPK'S	ANNUAL GROWTH RATE (RPK)	ASK'S	ANNUAL GROWTH RATE (ASK)	LOAD FACTOR
1971	11.9	0.0	26.2	0.0	45.2	0.4	0.0	0.6	0.0	62.8	12.2	0.0	26.8	0.0	45.6
1972	14.0	17.8	28.4	8.1	49.3	0.3	-6.5	0.6	-0.7	59.1	14.3	17.0	29.0	8.0	49.5
1973	15.8	12.8	32.4	14.1	48.7	0.4	14.9	0.6	11.3	61.0	16.2	12.8	33.1	14.1	48.9
1974	17.4	9.9	32.9	1.6	52.6	0.4	-9.5	0.6	-4.2	57.6	17.7	9.4	33.6	1.5	52.7
1975	17.2	-1.0	33.3	1.0	51.6	0.4	26.9	0.8	24.9	58.5	17.6	-0.5	34.1	1.4	51.8
1976	19.5	13.4	36.9	10.7	52.9	0.9	93.3	1.3	71.7	65.9	20.4	15.5	38.2	12.1	53.3
1977	21.8	11.6	40.4	9.7	53.8	1.2	41.5	2.0	48.7	62.7	23.0	12.9	42.4	11.0	54.2
1978	26.5	21.6	45.3	11.9	58.5	1.6	34.4	2.4	24.6	67.6	28.2	22.3	47.7	12.5	59.0
1979	32.0	20.7	54.6	20.5	58.7	1.2	-29.0	1.6	-34.3	73.1	33.2	17.8	56.2	17.7	59.1
1980*	31.4	-1.9	55.7	2.0	56.4	1.3	9.2	1.8	15.4	69.2	32.7	-1.5	57.6	2.4	56.8
1981	33.0	4.8	56.4	1.2	58.4	1.4	9.3	2.0	9.0	69.3	34.4	5.0	58.4	1.5	58.7
1982	35.2	6.7	59.2	4.9	59.4	1.5	8.5	2.2	7.8	69.7	36.7	6.8	61.4	5.0	59.7
1983	37.4	6.2	62.4	5.3	59.9	1.6	8.5	2.4	8.5	69.8	39.1	6.3	64.8	5.5	60.2
1984	39.6	5.8	65.3	4.5	60.6	1.8	8.6	2.6	8.5	69.9	41.4	5.9	67.8	4.7	61.0
1985	41.9	5.6	67.7	3.7	61.7	1.9	8.6	2.8	8.6	69.9	43.8	5.7	70.5	3.9	62.1
1986	44.4	6.1	70.6	4.1	62.9	2.1	8.7	3.0	8.6	70.0	46.5	6.2	73.6	4.3	63.2
1987	46.7	5.1	73.1	3.6	63.8	2.3	8.7	3.2	7.2	71.0	49.0	5.2	76.3	3.7	64.1
1988	49.2	5.3	75.6	3.3	65.1	2.5	8.8	3.5	8.7	71.0	51.7	5.5	79.1	3.6	65.3
1989	52.0	5.5	79.3	4.9	65.4	2.7	8.8	3.8	8.8	71.0	54.7	5.7	83.2	5.1	65.7
1990	54.7	5.2	82.6	4.1	66.1	3.0	8.8	4.2	8.8	71.0	57.6	5.3	86.8	4.3	66.4
1991	57.5	5.2	87.4	5.7	65.8	3.2	8.9	4.6	8.9	71.0	60.8	5.4	91.9	5.8	66.1
1992	60.5	5.1	91.9	5.1	65.8	3.5	8.9	5.0	8.9	71.1	64.1	5.3	96.8	5.3	66.1
1993	63.6	5.1	96.6	5.1	65.8	3.8	9.0	5.4	7.9	71.7	67.5	5.3	101.9	5.2	66.1
1994	66.9	5.0	101.5	5.0	65.8	4.2	9.0	5.8	9.0	71.7	71.1	5.2	107.3	5.2	66.2

*FORECAST BEGINS IN 1980

80-GEN-23735

PASSENGER TRAFFIC HISTORY AND FORECAST

TOTAL NON-U. S.

TOTAL REPORT (RPK'S AND ASK'S IN BILLIONS)

	SCHEDULED SERVICE					NONSCHEDULED SERVICE					ALL SERVICES				
YEAR	RPK'S	ANNUAL GROWTH RATE (RPK)	ASK'S	ANNUAL GROWTH RATE (ASK)	LOAD FACTOR	RPK'S	ANNUAL GROWTH RATE (RPK)	ASK'S	ANNUAL GROWTH RATE (ASK)	LOAD FACTOR	RPK'S	ANNUAL GROWTH RATE (RPK)	ASK'S	ANNUAL GROWTH RATE (ASK)	LOAD FACTOR
1971	172.9	0.0	324.4	0.0	53.3	30.0	0.0	44.8	0.0	66.8	202.9	0.0	369.2	0.0	54.9
1972	205.8	18.9	372.3	14.7	55.2	39.8	32.6	72.9	62.5	54.5	245.5	21.0	445.2	20.5	56.1
1973	254.6	23.7	433.3	16.3	58.7	48.1	20.9	68.2	-6.5	70.5	302.7	23.3	501.5	12.6	60.3
1974	280.8	10.2	479.8	10.7	58.5	58.2	21.0	72.3	10.4	77.3	339.0	11.9	555.1	10.6	61.0
1975	306.0	8.9	526.0	9.6	58.1	69.2	18.9	97.8	29.9	70.8	375.2	10.6	623.8	12.3	60.1
1976	339.0	10.8	573.3	9.0	58.1	70.2	1.4	101.7	3.9	69.0	409.3	9.0	675.0	8.2	60.6
1977	379.2	11.8	621.4	8.3	61.0	75.9	8.0	101.9	0.2	74.4	455.1	11.1	723.3	7.1	62.9
1978	431.6	13.8	684.4	10.1	63.0	82.9	9.2	108.5	6.4	76.4	514.5	13.0	792.9	9.6	64.8
1979*	480.2	11.2	760.3	11.0	63.1	90.1	8.6	122.9	13.2	73.3	570.3	10.8	883.1	11.3	64.5
1980**	527.4	9.8	835.1	9.8	63.1	98.5	9.3	131.6	7.1	74.8	625.9	9.7	966.8	9.4	64.7
1981	577.7	9.5	916.6	9.7	63.0	106.5	8.0	140.7	6.9	75.6	684.2	9.3	1057.4	9.3	64.7
1982	627.0	8.5	996.6	8.7	62.9	113.5	6.6	149.5	6.2	75.9	740.5	8.2	1146.1	8.3	64.6
1983	676.5	7.8	1073.0	7.6	63.0	120.5	6.1	158.7	6.2	75.9	797.0	7.6	1231.7	7.4	64.7
1984	727.6	7.5	1148.9	7.0	63.3	127.8	6.0	168.1	5.9	76.0	855.4	7.3	1317.0	6.9	64.9
1985	782.2	7.5	1229.3	6.9	63.6	135.5	6.0	178.3	6.0	76.0	917.8	7.2	1407.6	6.8	65.1
1986	840.3	7.4	1315.1	6.9	63.9	143.8	6.0	188.6	5.7	76.2	984.1	7.2	1503.7	6.8	65.4
1987	902.4	7.3	1395.4	6.1	64.6	152.1	5.7	198.8	5.3	76.5	1054.5	7.1	1594.2	6.0	66.1
1988	969.1	7.3	1488.6	6.6	65.1	160.9	5.8	209.4	5.3	76.8	1130.0	7.1	1698.0	6.5	66.5
1989	1035.4	6.8	1598.8	6.7	65.1	170.2	5.7	219.7	4.9	77.4	1205.6	6.6	1808.5	6.5	66.6
1990	1106.1	6.8	1690.0	6.3	65.4	179.2	5.3	229.9	4.6	77.9	1285.2	6.6	1919.9	6.1	66.9
1991	1180.9	6.7	1802.2	6.6	65.5	188.6	5.2	241.9	5.2	77.9	1369.5	6.5	2044.1	6.4	66.9
1992	1260.6	6.7	1923.7	6.7	65.5	198.5	5.2	254.8	5.3	77.8	1459.1	6.5	2178.5	6.5	66.9
1993	1345.7	6.7	2053.9	6.7	65.5	209.0	5.2	268.6	5.3	77.8	1554.7	6.5	2322.5	6.6	66.9
1994	1436.8	6.7	2193.3	6.7	65.5	220.2	5.3	283.2	5.4	77.7	1657.0	6.5	2476.5	6.6	66.9

*1979 DATA ARE ESTIMATED

**FORECAST BEGINS IN 1980

80-GEN-23731

TOTAL WORLD

PASSENGER AIRCRAFT REQUIREMENT

BY GENERIC CLASS

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
SHORT-RANGE 110																
PERMANENTLY RETIRED		(92)	(80)	(99)	(84)	(71)	(119)	(90)	(125)	(97)	(98)	(102)	(88)	(96)	(42)	(50)
ORDERS AND OPTIONS		115	85	59	11	3										
ADDITIONAL AIRCRAFT		0	23	20	29	31	31	29	22	17	6					
END-OF-YEAR TOTAL	1734	1757	1785	1765	1721	1684	1596	1535	1432	1352	1260	1158	1070	984	942	892
SHORT-RANGE 160																
PERMANENTLY RETIRED		(46)	(52)	(88)	(84)	(71)	(92)	(92)	(84)	(84)	(87)	(105)	(71)	(70)	(74)	(93)
ORDERS AND OPTIONS		173	143	76	29	21	14	17	15	6						
ADDITIONAL AIRCRAFT		0	0	23	49	68	115	152	153	184	189	202	209	159	146	167
END-OF-YEAR TOTAL	1536	1663	1754	1765	1759	1777	1814	1891	1975	2081	2163	2260	2398	2487	2559	2633
MEDIUM-RANGE 200																
PERMANENTLY RETIRED		(43)	(38)	(27)	(42)	(29)	(13)	(14)	(3)	(2)						
ORDERS AND OPTIONS		0	0	27	106	94	73	63	32	17						
ADDITIONAL AIRCRAFT		0	0	0	14	22	46	47	43	58	73	81	92	95	98	98
END-OF-YEAR TOTAL	220	177	139	139	217	304	410	506	578	651	724	805	897	992	1090	1188
MEDIUM-RANGE 250																
PERMANENTLY RETIRED		(8)	(1)	(2)	(1)	(2)	(8)	(1)	(1)	(2)	(2)	(2)	(2)			
ORDERS AND OPTIONS		58	69	62	40	18	8	6								
ADDITIONAL AIRCRAFT		0	0	1	18	23	31	35	31	37	44	48	55	42	56	59
END-OF-YEAR TOTAL	438	488	557	618	675	714	745	785	815	850	892	938	991	1033	1089	1148
LONG-RANGE 270																
PERMANENTLY RETIRED		(68)	(73)	(69)	(56)	(49)	(66)	(49)	(38)	(24)	(17)	(13)	(8)	(5)	(3)	(0)
ORDERS AND OPTIONS		51	35	20	16	2	1									
ADDITIONAL AIRCRAFT		0	2	20	28	25	45	43	41	37	30	31	23	19	21	16
END-OF-YEAR TOTAL	761	744	708	679	667	645	625	619	622	635	648	666	681	695	713	729
LONG-RANGE 400																
PERMANENTLY RETIRED		(0)	(0)	(0)	(0)	(0)	(5)	(2)	(1)	(1)	(0)	(0)	(1)	(1)	(0)	(6)
ORDERS AND OPTIONS		58	42	17	17	8	1	1	1							
ADDITIONAL AIRCRAFT		0	0	4	15	20	30	40	42	51	68	67	83	100	102	125
END-OF-YEAR TOTAL	343	401	443	464	496	524	550	589	631	681	749	816	898	997	1099	1218

80-GEN-24581

TOTAL NON-U.S.

PASSENGER AIRCRAFT REQUIREMENT

BY GENERIC CLASS

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
SHORT-RANGE 110																
PERMANENTLY RETIRED		(46)	(55)	(72)	(61)	(39)	(74)	(66)	(96)	(89)	(64)	(58)	(60)	(62)	(29)	(35)
ORDERS AND OPTIONS		88	64	42	11	3										
ADDITIONAL AIRCRAFT		0	22	19	26	30	30	27	18	16	5					
END-OF-YEAR TOTAL	1127	1170	1201	1190	1166	1160	1116	1077	999	946	887	829	769	707	678	643
SHORT-RANGE 160																
PERMANENTLY RETIRED		(14)	(17)	(24)	(23)	(24)	(35)	(39)	(28)	(22)	(21)	(40)	(31)	(29)	(24)	(20)
ORDERS AND OPTIONS		76	80	23	19	11	8	11	9							
ADDITIONAL AIRCRAFT		0	0	22	18	39	50	64	70	92	89	75	114	76	83	97
END-OF-YEAR TOTAL	517	579	622	643	648	674	697	733	792	862	930	965	1048	1104	1163	1240
MEDIUM-RANGE 200																
PERMANENTLY RETIRED		(19)	(18)	(22)	(27)	(19)	(13)	(14)	(3)	(2)						
ORDERS AND OPTIONS		0	0	4	46	51	41	35	25	17						
ADDITIONAL AIRCRAFT		0	0	0	14	14	26	34	28	39	42	47	51	57	63	55
END-OF-YEAR TOTAL	146	127	109	91	124	170	224	279	329	383	425	472	523	580	643	698
MEDIUM-RANGE 250																
PERMANENTLY RETIRED		(8)	(1)	(1)	(0)	(1)	(7)	(1)	(0)	(1)	(2)	(2)	(2)			
ORDERS AND OPTIONS		40	55	47	28	18	8	6								
ADDITIONAL AIRCRAFT		0	0	0	11	18	23	23	24	22	31	26	34	24	36	38
END-OF-YEAR TOTAL	185	217	271	317	348	375	399	427	451	472	501	525	557	581	617	655
LONG-RANGE 270																
PERMANENTLY RETIRED		(49)	(57)	(51)	(34)	(38)	(57)	(43)	(33)	(17)	(13)	(12)	(8)	(4)	(2)	
ORDERS AND OPTIONS		32	26	18	14	2	1									
ADDITIONAL AIRCRAFT		0	1	17	17	19	41	41	38	33	26	27	20	17	19	15
END-OF-YEAR TOTAL	548	531	501	485	482	465	450	448	453	469	482	497	509	522	539	554
LONG-RANGE 400																
PERMANENTLY RETIRED		(0)	(0)	(0)	(0)	(0)	(2)	(1)	(0)	(1)	(0)	(0)	(1)	(1)		
ORDERS AND OPTIONS		52	39	15	14	8	1	1	1							
ADDITIONAL AIRCRAFT		0	0	2	12	14	23	28	30	38	45	36	50	63	65	84
END-OF-YEAR TOTAL	247	299	338	355	381	403	425	453	484	521	566	602	651	713	778	862

80-GEN-24580

TOTAL U.S.

PASSENGER AIRCRAFT REQUIREMENT

BY GENERIC CLASS

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
SHORT-RANGE 110																
PERMANENTLY RETIRED		(47)	(25)	(27)	(23)	(32)	(45)	(24)	(29)	(28)	(34)	(44)	(28)	(24)	(13)	(15)
ORDERS AND OPTIONS		27	21	17												
ADDITIONAL AIRCRAFT		0	1	1	3	1	1	2	4	1	1					
END-OF-YEAR TOTAL	607	587	584	575	555	524	480	458	433	406	373	329	301	277	264	249
SHORT-RANGE 160																
PERMANENTLY RETIRED		(32)	(35)	(64)	(61)	(47)	(57)	(53)	(64)	(62)	(66)	(65)	(40)	(50)	(50)	(73)
ORDERS AND OPTIONS		97	83	53	19	18	6	6	6	6						
ADDITIONAL AIRCRAFT		0	0	1	31	29	65	88	83	92	80	127	95	83	63	70
END-OF-YEAR TOTAL	1019	1094	1132	1122	1111	1103	1117	1158	1183	1219	1233	1295	1350	1383	1396	1393
MEDIUM-RANGE 200																
PERMANENTLY RETIRED		(24)	(20)	(5)	(10)											
ORDERS AND OPTIONS		0	0	23	60	43	32	28	7							
ADDITIONAL AIRCRAFT		0	0	0	0	8	20	13	15	19	31	34	41	38	35	43
END-OF-YEAR TOTAL	74	50	30	48	93	134	186	227	249	268	299	333	374	412	447	490
MEDIUM-RANGE 250																
PERMANENTLY RETIRED		(0)	(0)	(1)	(1)	(1)	(1)	(0)	(1)	(1)						
ORDERS AND OPTIONS		19	14	15	20											
ADDITIONAL AIRCRAFT		0	0	1	7	13	8	12	7	15	13	22	21	18	20	21
END-OF-YEAR TOTAL	253	272	286	301	327	339	346	358	364	378	391	413	434	452	472	493
LONG-RANGE 270																
PERMANENTLY RETIRED		(19)	(16)	(18)	(22)	(11)	(9)	(6)	(5)	(7)	(4)	(1)	(0)	(1)	(1)	
ORDERS AND OPTIONS		19	9	2	2											
ADDITIONAL AIRCRAFT		0	1	3	11	6	4	2	3	4	4	4	3	2	2	1
END-OF-YEAR TOTAL	213	213	207	194	185	180	175	171	169	166	166	169	172	173	174	175
LONG-RANGE 400																
PERMANENTLY RETIRED		(0)	(0)	(0)	(0)	(0)	(3)	(1)	(1)	(0)	(0)	(0)	(0)	(0)	(0)	(6)
ORDERS AND OPTIONS		6	3	2	3											
ADDITIONAL AIRCRAFT		0	0	2	3	6	7	12	12	13	23	31	33	37	37	41
END-OF-YEAR TOTAL	96	102	105	109	115	121	125	136	147	160	183	214	247	284	321	356

80-GEN-24579

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